# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**Washington, DC 20549**

# Form 10-Q

**(Mark One)**

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

**For the Quarterly Period Ended September 30, 2026**

**OR**

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF SECURITIES EXCHANGE ACT OF 1934

**For the transition period from _____ to _____**

**Commission file number 000-19125**

# Ionis Pharmaceuticals, Inc.
(Exact name of Registrant as specified in its charter)

| **Delaware** | **33-0336973** |
|---|---|
| (State or other jurisdiction of incorporation or organization) | (IRS Employer Identification No.) |
| **2855 Gazelle Court, Carlsbad, California** | **92010** |
| (Address of Principal Executive Offices) | (Zip Code) |

**760-931-9200**
(Registrant's telephone number, including area code)

**Securities registered pursuant to Section 12(b) of the Act:**

| Title of each class | Trading symbol | Name of each exchange on which registered |
|---|---|---|
| Common Stock, $.001 Par Value | "IONS" | The Nasdaq Stock Market LLC |

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

| | |
|---|---|
| Large Accelerated Filer ☒ | Accelerated Filer ☐ |
| Non-accelerated Filer ☐ | Smaller Reporting Company ☐<br>Emerging Growth Company ☐ |

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12(b)-2 of the Securities Exchange Act of 1934). Yes ☐ No ☒

The number of shares of voting common stock outstanding as of November 3, 2026 was 166,545,100.

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**IONIS PHARMACEUTICALS, INC.**
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**TRADEMARKS**

"Ionis," the Ionis logo, and other trademarks or service marks of Ionis Pharmaceuticals, Inc. appearing in this report are the property of Ionis Pharmaceuticals, Inc. "Akcea," the Akcea logo, and other trademarks or service marks of Akcea Therapeutics, Inc. appearing in this report are the property of Akcea Therapeutics, Inc., Ionis' wholly owned subsidiary. This report contains additional trade names, trademarks and service marks of others, which are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this report may appear without the ® or TM symbols.



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**PART I — FINANCIAL INFORMATION**

**ITEM 1. FINANCIAL STATEMENTS**

**IONIS PHARMACEUTICALS, INC.**
**CONDENSED CONSOLIDATED BALANCE SHEETS**
**(in thousands, except share data)**

| | September 30, 2026 (unaudited) | December 31, 2025 |
|---|---|---|
| **ASSETS** | | |
| Current assets: | | |
| Cash and cash equivalents | $ 296,303 | $ 372,260 |
| Short-term investments | 1,587,604 | 2,305,176 |
| Contracts receivable | 88,340 | 66,059 |
| Inventories | 28,578 | 10,048 |
| Other current assets | 360,676 | 237,092 |
| Total current assets | 2,361,501 | 2,990,635 |
| Property, plant and equipment, net | 162,059 | 123,048 |
| Right-of-use assets | 228,035 | 238,549 |
| Deposits and other assets | 160,995 | 171,604 |
| Total assets | $ 2,912,590 | $ 3,523,836 |
| **LIABILITIES AND STOCKHOLDERS' EQUITY** | | |
| Current liabilities: | | |
| Accounts payable | $ 27,113 | $ 28,082 |

| | | |
|---|---|---|
| Accrued compensation | 61,379 | 116,236 |
| Accrued liabilities | 116,177 | 106,089 |
| Income taxes payable | 109 | 2,713 |
| 0 percent convertible senior notes due April 2026, net | - | 431,948 |
| Liability related to sale of future royalties, net | 138,188 | 11,689 |
| Current portion of deferred contract revenue | 70,203 | 73,761 |
| Other current liabilities | 22,123 | 11,049 |
| Total current liabilities | 435,292 | 781,567 |
| Long-term deferred contract revenue | 48,755 | 92,001 |
| 0 percent convertible senior notes due 2030, net | 754,289 | 751,495 |
| 1.75 percent convertible senior notes due 2028, net | 569,974 | 567,830 |
| Liability related to sale of future royalties, net | 427,840 | 551,353 |
| Long-term lease liabilities | 262,477 | 262,383 |
| Long-term obligations | 20,323 | 28,118 |
| Total liabilities | 2,518,950 | 3,034,747 |
| Stockholders' equity: | | |
| Common stock, $0.001 par value; 300,000,000 shares authorized, 166,410,425 and 163,304,875 shares issued and outstanding at September 30, 2026 and December 31, 2025, respectively | 166 | 163 |
| Additional paid-in capital | 3,381,632 | 3,145,402 |
| Accumulated other comprehensive loss | (39,818) | (25,281) |
| Accumulated deficit | (2,948,340) | (2,631,195) |
| Total stockholders' equity | 393,640 | 489,089 |
| Total liabilities and stockholders' equity | $ 2,912,590 | $ 3,523,836 |

See accompanying notes.



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**IONIS PHARMACEUTICALS, INC.**
**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS**
**(in thousands, except per share amounts)**
**(Unaudited)**

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue: | | | | |
| Commercial revenue: | | | | |
| Product sales, net | $ 48,296 | $ 32,530 | $ 122,390 | $ 58,091 |
| Royalty revenue | 80,592 | 75,694 | 214,874 | 209,811 |
| Other commercial revenue | 7,317 | 7,374 | 25,375 | 26,621 |
| Total commercial revenue | 136,205 | 115,598 | 362,639 | 294,523 |
| Research and development revenue: | | | | |
| Collaborative agreement revenue | 102,770 | 31,436 | 356,567 | 413,387 |
| WAINUA joint development revenue | 3,746 | 9,685 | 37,556 | 32,471 |
| Total research and development revenue | 106,516 | 41,121 | 394,123 | 445,858 |
| Total revenue | 242,721 | 156,719 | 756,762 | 740,381 |
| Expenses: | | | | |
| Cost of sales | 3,322 | 2,338 | 9,043 | 7,952 |
| Research, development and patent | 215,878 | 217,754 | 643,158 | 635,973 |
| Selling, general and administrative | 154,222 | 96,809 | 454,977 | 263,681 |
| Total operating expenses | 373,422 | 316,901 | 1,107,178 | 907,606 |
| Loss from operations | (130,701) | (160,182) | (350,416) | (167,225) |
| Other income (expense): | | | | |
| Investment income | 19,543 | 23,682 | 65,257 | 73,035 |
| Interest expense | (4,628) | (4,212) | (14,405) | (12,434) |
| Interest expense related to sale of future royalties | (4,129) | (17,952) | (38,972) | (55,422) |
| Gain on investments, net | 9,526 | 29,908 | 21,927 | 9,432 |
| Other income, net | 277 | 363 | 805 | 929 |
| Loss before income tax benefit (expense) | (110,112) | (128,393) | (315,804) | (151,685) |
| Income tax benefit (expense) | 141 | (213) | (1,341) | (308) |
| Net loss | $ (109,971) | $ (128,606) | $ (317,145) | $ (151,993) |
| Basic and diluted net loss per share | $ (0.66) | $ (0.80) | $ (1.92) | $ (0.95) |
| Shares used in computing basic and diluted net loss per share | 166,205 | 159,765 | 165,504 | 159,216 |

See accompanying notes.



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**CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS**
**(in thousands)**
**(Unaudited)**

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Net loss | $ (109,971) | $ (128,606) | $ (317,145) | $ (151,993) |
| Unrealized gains (losses) on debt securities, net of tax | (5,910) | 2,091 | (14,338) | 4,088 |
| Currency translation adjustment | (11) | (82) | (199) | 745 |
| Comprehensive loss | $ (115,892) | $ (126,597) | $ (331,682) | $ (147,160) |

See accompanying notes.



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**IONIS PHARMACEUTICALS, INC.**
**CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**
**(in thousands)**
**(Unaudited)**

| | Common Stock | | Additional Paid in Capital | Accumulated Other Comprehensive Loss | Accumulated Deficit | Total Stockholders' Equity |
|---|---|---|---|---|---|---|
| **Description** | **Shares** | **Amount** | | | | |
| **Balance at June 30, 2025** | 159,197 | $ 159 | $ 2,932,747 | $ (27,987) | $ (2,273,195) | $ 631,724 |
| Net loss | - | - | - | - | (128,606) | (128,606) |
| Change in unrealized gains, net of tax | - | - | - | 2,091 | - | 2,091 |
| Foreign currency translation | - | - | - | (82) | - | (82) |
| Issuance of common stock in connection with employee stock plans, net | 1,941 | 2 | 81,257 | - | - | 81,259 |
| Stock-based compensation expense | - | - | 31,581 | - | - | 31,581 |
| **Balance at September 30, 2025** | 161,138 | $ 161 | $ 3,045,585 | $ (25,978) | $ (2,401,801) | $ 617,967 |
| | | | | | | |
| **Balance at June 30, 2026** | 165,637 | $ 166 | $ 3,311,837 | $ (33,897) | $ (2,838,369) | $ 439,737 |
| Net loss | - | - | - | - | (109,971) | (109,971) |
| Change in unrealized losses, net of tax | - | - | - | (5,910) | - | (5,910) |
| Foreign currency translation | - | - | - | (11) | - | (11) |
| Issuance of common stock in connection with employee stock plans, net | 705 | - | 25,833 | - | - | 25,833 |
| Stock-based compensation expense | - | - | 43,962 | - | - | 43,962 |
| Issuance of common stock to settle exercised warrants in connection with 0 percent convertible senior notes due 2026 | 68 | - | - | - | - | - |
| **Balance at September 30, 2026** | 166,410 | $ 166 | $ 3,381,632 | $ (39,818) | $ (2,948,340) | $ 393,640 |

See accompanying notes.



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**IONIS PHARMACEUTICALS, INC.**
**CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**
**(in thousands)**
**(Unaudited)**

| | Common Stock | | Additional Paid in Capital | Accumulated Other Comprehensive Loss | Accumulated Deficit | Total Stockholders' Equity |
|---|---|---|---|---|---|---|
| **Description** | **Shares** | **Amount** | | | | |
| **Balance at December 31, 2024** | 157,909 | $ 158 | $ 2,868,812 | $ (30,811) | $ (2,249,808) | $ 588,351 |
| Net loss | - | - | - | - | (151,993) | (151,993) |
| Change in unrealized gains, net of tax | - | - | - | 4,088 | - | 4,088 |
| Foreign currency translation | - | - | - | 745 | - | 745 |
| Issuance of common stock in connection with employee stock plans, net | 3,229 | 3 | 84,784 | - | - | 84,787 |
| Stock-based compensation expense | - | - | 91,989 | - | - | 91,989 |
| **Balance at September 30, 2025** | 161,138 | $ 161 | $ 3,045,585 | $ (25,978) | $ (2,401,801) | $ 617,967 |
| | | | | | | |
| **Balance at December 31, 2025** | 163,305 | $ 163 | $ 3,145,402 | $ (25,281) | $ (2,631,195) | $ 489,089 |
| Net loss | - | - | - | - | (317,145) | (317,145) |
| Change in unrealized losses, net of tax | - | - | - | (14,338) | - | (14,338) |
| Foreign currency translation | - | - | - | (199) | - | (199) |
| Issuance of common stock in connection with employee stock plans, net | 3,870 | 3 | 103,390 | - | - | 103,393 |
| Stock-based compensation expense | - | - | 132,850 | - | - | 132,850 |
| Issuance of common stock to settle conversion obligation of 0 percent convertible senior notes due 2026 | 1,798 | (2) | (13) | - | - | (15) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Retirement of shares received from the exercise of bond hedges related to 0 percent convertible senior notes due 2026 | (2,631) | 2 | 3 | - | - | 5 |
| Issuance of common stock to settle exercised warrants in connection with 0 percent convertible senior notes due 2026 | 68 | - | - | - | - | - |
| **Balance at September 30, 2026** | 166,410 | $ 166 | $ 3,381,632 | $ (39,818) | $ (2,948,340) | $ 393,640 |

See accompanying notes.



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**IONIS PHARMACEUTICALS, INC.**
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS**
**(in thousands)**
**(Unaudited)**

| | Nine Months Ended September 30, | |
|---|---|---|
| | **2026** | **2025** |
| **Operating activities:** | | |
| Net loss | $ (317,145) | $ (151,993) |
| Adjustments to reconcile net loss to net cash used in operating activities: | | |
| Depreciation | 10,333 | 6,749 |
| Amortization of right-of-use operating lease assets | 10,514 | 6,803 |
| Amortization of other assets | 2,096 | 1,801 |
| Amortization of discount on investments, net | (12,597) | (18,063) |
| Amortization of debt issuance costs | 6,045 | 4,940 |
| Non-cash royalty revenue related to sale of royalties | (35,986) | (38,478) |
| Non-cash interest related to sale of future royalties | 38,427 | 54,964 |
| Stock-based compensation expense | 132,294 | 90,554 |
| Gain on investments, net | (21,929) | (9,437) |
| Non-cash losses (gains) related to other assets | 1,296 | (3,643) |
| Changes in operating assets and liabilities: | | |
| Contracts receivable | (22,281) | 67,580 |
| Inventories | (46,622) | (14,600) |
| Other current and long-term assets | (60,346) | (123,489) |
| Accounts payable | (2,051) | (29,116) |
| Income taxes | (2,604) | 67 |
| Accrued compensation | (54,857) | (12,595) |
| Accrued liabilities and other liabilities | 15,512 | 87,683 |
| Deferred contract revenue | (46,804) | (50,601) |
| Net cash used in operating activities | (406,705) | (130,874) |
| | | |
| **Investing activities:** | | |
| Purchases of short-term investments | (706,278) | (1,126,595) |
| Proceeds from sale of short-term investments | 1,422,166 | 1,302,751 |
| Purchases of property, plant and equipment | (50,556) | (30,152) |
| Acquisition of licenses and other assets, net | (5,139) | (4,275) |
| Net cash provided by investing activities | 660,193 | 141,729 |
| | | |
| **Financing activities:** | | |
| Proceeds from issuance of common stock through equity plans, net | 103,393 | 84,787 |
| Repayment of 0 percent convertible senior notes due 2026 | (432,511) | - |
| Principal payments on mortgage debt | (128) | (123) |
| Net cash provided by (used in) financing activities | (329,246) | 84,664 |
| | | |
| Effects of exchange rates on cash | (199) | 745 |
| | | |
| Net increase (decrease) in cash and cash equivalents | (75,957) | 96,264 |
| Cash and cash equivalents at beginning of period | 372,260 | 242,077 |
| Cash and cash equivalents at end of period | $ 296,303 | $ 338,341 |
| | | |
| **Supplemental disclosures of cash flow information:** | | |
| Interest paid | $ 7,819 | $ 5,399 |
| Income taxes paid (refunds received), net | $ 3,794 | $ (661) |
| | | |
| **Supplemental disclosures of non-cash investing and financing activities:** | | |
| Right-of-use assets obtained in exchange for lease obligations | $ - | $ 86,939 |
| Amounts accrued for capital and patent expenditures | $ 1,082 | $ 478 |

See accompanying notes.



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## 1. Organization and Basis of Presentation

### Organization and Business Activity

We incorporated in California on January 10, 1989. In conjunction with our initial public offering, we reorganized as a Delaware corporation in April 1991. We are a fully integrated commercial-stage biotechnology company and a leader in the discovery and development of RNA-targeted therapeutics.

### Basis of Presentation

We prepared the unaudited interim condensed consolidated financial statements for the three and nine months ended September 30, 2026 and 2025 on the same basis as the audited financial statements for the year ended December 31, 2025. We included all normal recurring adjustments in the financial statements, which we considered necessary for a fair presentation of our financial position at such dates and our operating results and cash flows for those periods. Our operating results for the interim periods may not be indicative of what our operating results will be for the entire year. For more complete financial information, these financial statements, and notes thereto, should be read in conjunction with the audited financial statements for the year ended December 31, 2025 included in our Annual Report on Form 10-K filed with the Securities and Exchange Commission, or SEC.

In our condensed consolidated financial statements, we included the accounts of Ionis Pharmaceuticals, Inc. and the consolidated results of its wholly owned subsidiaries ("we", "us" or "our").

We operate as a single segment, Ionis operations, because our chief operating decision maker, or CODM, reviews operating results on an aggregate basis and manages our operations as a single operating segment. Refer to Note 13, *Segment Information*, for further details on our segment information.

### Use of Estimates

We prepare our condensed consolidated financial statements in conformity with accounting principles generally accepted in the United States, or U.S., that require us to make estimates and assumptions that affect the amounts reported in our condensed consolidated financial statements and accompanying notes. Actual results could differ from our estimates.

## 2. Significant Accounting Policies

Our significant accounting policies have not changed substantially from those included in our Annual Report on Form 10-K for the year ended December 31, 2025.

### Recent Accounting Standards

In July 2025, the FASB issued ASU 2025-05, which amended the guidance in ASC 326 to simplify the estimation of credit losses on accounts receivable and contract assets from revenue transactions. The amended guidance allows companies to elect a practical expedient to assume that conditions as of the balance sheet date will remain unchanged for the remaining life of the asset when estimating the expected credit losses of the asset. This update is effective for annual periods beginning after December 15, 2025 and interim periods within those annual periods. Companies that elect the practical expedient are required to apply the amendments prospectively. We adopted this update in the first quarter of 2026 on a prospective basis and elected the practical expedient. The updated guidance did not have a material impact on our condensed consolidated financial statements.



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In September 2025, the FASB issued ASU 2025-06, which amended and simplified the existing guidance for software costs. The amended guidance removes references to software development stages and allows companies to begin capitalizing software costs when management has authorized and committed to funding the software project and it is probable that the project will be completed with the software performing the intended function. This update is effective for annual periods beginning after December 15, 2027 and interim periods within those annual periods. Early adoption of this guidance is permitted at the beginning of an annual reporting period. The guidance may be applied on a prospective or retrospective basis. We early adopted this update in the first quarter of 2026 on a prospective basis. The updated guidance did not have a material impact on our condensed consolidated financial statements.

We do not expect any recently issued accounting standards other than the standards mentioned above and those included in our Annual Report on Form 10-K for the year ended December 31, 2025 to have a material impact to our financial results.

## 3. Supplemental Financial Data

### Inventories

Our inventories consisted of the following (in thousands):

| | September 30, 2026 | December 31, 2025 |
|---|---|---|
| Raw materials | $ 1,151 | $ 1,039 |
| Work in process | 66,427 | 24,051 |
| Finished goods | 5,788 | 1,096 |
| Total | $ 73,366 | $ 26,186 |
| Reported as: | | |
| Inventories | $ 28,578 | $ 10,048 |
| Deposits and other assets | 44,788 | 16,138 |
| Total | $ 73,366 | $ 26,186 |

Work in process inventory increased as of September 30, 2026 compared to December 31, 2025 primarily due to our purchases of TRYNGOLZA drug substance.

We classify inventories as non-current assets when we expect the inventories to remain on hand beyond one year. We include non-current inventories in deposits and other assets in our condensed consolidated balance sheets. The amounts reported as deposits and other assets as of September 30, 2026 and December 31, 2025 consisted of work in process inventory.

### Accrued Liabilities

Our accrued liabilities consisted of the following (in thousands):

| | September 30, 2026 | December 31, 2025 |
|---|---|---|
| Clinical expenses | $ 53,561 | $ 53,659 |
| In-licensing expenses | 11,400 | 8,588 |
| Commercial expenses, including gross-to-net product accruals | 33,637 | 15,556 |
| Other miscellaneous expenses | 17,579 | 28,286 |
| Total accrued liabilities | $ 116,177 | $ 106,089 |



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**4. Revenues**

During the three and nine months ended September 30, 2026 and 2025, our revenues consisted of the following (in thousands):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue: | | | | |
| Commercial revenue: | | | | |
| Product sales, net: | | | | |
| TRYNGOLZA sales, net | $ 9,329 | $ 31,792 | $ 41,003 | $ 57,353 |
| DAWNZERA sales, net | 36,773 | 738 | 79,193 | 738 |
| ZANVASTRO sales, net | 2,194 | - | 2,194 | - |
| Total product sales, net | 48,296 | 32,530 | 122,390 | 58,091 |
| Royalty revenue: | | | | |
| SPINRAZA royalties | 69,393 | 55,896 | 166,589 | 158,243 |
| WAINUA royalties | 6,847 | 13,320 | 33,993 | 33,107 |
| Other royalties | 4,352 | 6,478 | 14,292 | 18,461 |
| Total royalty revenue | 80,592 | 75,694 | 214,874 | 209,811 |
| Other commercial revenue | 7,317 | 7,374 | 25,375 | 26,621 |
| Total commercial revenue | 136,205 | 115,598 | 362,639 | 294,523 |
| Research and development revenue: | | | | |
| Collaborative agreement revenue | 102,770 | 31,436 | 356,567 | 413,387 |
| WAINUA joint development revenue | 3,746 | 9,685 | 37,556 | 32,471 |
| Total research and development revenue | 106,516 | 41,121 | 394,123 | 445,858 |
| Total revenue | $ 242,721 | $ 156,719 | $ 756,762 | $ 740,381 |

**Revenue Sources**

The following are sources of revenue and when we typically recognize revenue.

*Commercial Revenue*

In June 2026, the U.S. Food and Drug Administration, or FDA, approved TRYNGOLZA for the treatment of sHTG. Following the approval, we launched TRYNGOLZA for the treatment of sHTG and began earning revenue from TRYNGOLZA sales for the sHTG indication. TRYNGOLZA is also approved in the U.S. for the treatment of familial chylomicronemia syndrome, or FCS. In April 2026, we lowered the Wholesale Acquisition Cost, or WAC, of TRYNGOLZA to address the sHTG population prior to receiving FDA approval. This allowed us to proactively align with annual payer contracting cycles for 2027 and facilitate access following the approval.

In August 2025, the FDA approved DAWNZERA for prophylaxis to prevent attacks of hereditary angioedema, or HAE, in adult and pediatric patients 12 years of age and older. Following the approval, we launched DAWNZERA and began earning revenue from DAWNZERA sales.

In September 2026, the FDA approved ZANVASTRO (zilganersen) for the treatment of Alexander disease, or AxD, in pediatric and adult patients. Following the approval, we launched ZANVASTRO and began earning revenue from ZANVASTRO sales.



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We earn royalty payments primarily on net sales of SPINRAZA, WAINUA and QALSODY. We include QALSODY royalties within other royalties in the table above.

We earn commercial revenue from TEGSEDI and WAYLIVRA sales under our distribution agreements with Swedish Orphan Biovitrum AB, or Sobi. In addition, we receive royalties from PTC Therapeutics International Limited, or PTC, for TEGSEDI and WAYLIVRA sales. Refer to Part IV, Item 15, Note 4, *Collaborative Arrangements and Licensing Agreements*, of our audited financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2025 for details on our commercialization partnerships with Sobi and PTC.

Under our distribution agreements with Sobi, we concluded that our performance obligation is to provide services to Sobi over the term of the agreement, which includes supplying finished goods inventory to Sobi. We are also responsible for maintaining the marketing authorization for TEGSEDI and WAYLIVRA in major markets and for leading the global commercial strategy for each medicine. We view this performance obligation as a series of distinct activities that are substantially the same. We recognize as revenue the price Sobi pays us for the inventory when we deliver the finished goods inventory to Sobi. We also recognize distribution fee revenue based on Sobi's net sales of TEGSEDI and WAYLIVRA. Under our agreements with Sobi, Sobi does not generally have a right of return.

*Research and development revenue under collaboration agreements*

We enter into collaboration agreements to license and sell our technology on an exclusive or non-exclusive basis. Our collaboration agreements typically contain multiple elements, or performance obligations, including technology licenses or options to obtain technology licenses, R&D services and manufacturing services.

For R&D services that we recognize over time, we measure our progress using an input method. The input methods we use are based on the effort we expend

or costs we incur toward the satisfaction of our performance obligation. We estimate the amount of effort we expend, including the time we estimate it will take us to complete the activities, or costs we incur in a given period, relative to the estimated total effort or costs to satisfy the performance obligation. This results in a percentage that we multiply by the transaction price to determine the amount of revenue we recognize each period. This approach requires us to make numerous estimates and use judgement. If our estimates or judgements change over the course of the collaboration, they may affect the timing and amount of revenue that we recognize in the current and future periods.

*Upfront payments:* When we enter into a collaboration agreement and receive an upfront payment, we record the entire upfront payment as deferred revenue if our only performance obligation is for R&D services we will provide in the future. We amortize the upfront payment into revenue as we perform the R&D services. If part or all of the upfront payment is a license fee, we recognize as revenue the portion related to the license when we deliver the license to our partner because our partner has full use of the license and we do not have any additional performance obligations related to the license after delivery.

*Milestone payments:* We include variable consideration in the transaction price when it is probable. We typically include milestone payments for R&D services in the transaction price when they are achieved. We include these milestone payments when they are achieved because there is considerable uncertainty in the research and development processes that trigger these payments. Similarly, we include regulatory milestone payments in the transaction price once the medicine is approved by the applicable regulatory agency. We will recognize sales-based milestone payments in the period in which we achieve the milestone under the sales-based royalty exception allowed under accounting rules.

We recognize milestone payments that relate to an ongoing performance obligation over our period of performance. For example, when we achieve a milestone payment from a partner for advancing a clinical study under a collaboration agreement, we add the milestone payment to the transaction price if the milestone relates to an ongoing R&D services performance obligation and recognize revenue related to the milestone payment over our estimated period of performance. If we have partially completed our performance obligation, we record a cumulative-effect adjustment in the period we add the milestone payment to the transaction price.

Conversely, we recognize in full those milestone payments that we earn based on our partners' activities when our partner achieves the milestone event and we do not have a remaining performance obligation.

*License fees:* We recognize as revenue the total amount we determine to be the relative stand-alone selling price of a license when we deliver the license to our partner because our partner has full use of the license and we do not have any additional performance obligations related to the license after delivery.



*WAINUA (Eplontersen) Collaboration with AstraZeneca*

In 2021, we entered into a collaboration agreement with AstraZeneca to develop and commercialize WAINUA for the treatment of transthyretin amyloidosis, or ATTR, with the parties sharing responsibility for development, and AstraZeneca having responsibility for commercializing WAINUA. Under the terms of the agreement, we received a $200 million upfront payment in 2021.

At inception of the agreement, we evaluated our WAINUA collaboration under ASC Topic 808, *Collaborative Arrangements*, or ASC 808, and identified four material components: (i) the license we granted to AstraZeneca in 2021, (ii) the shared development activities that we and AstraZeneca were to perform, (iii) the shared commercialization activities that we and AstraZeneca were to perform and (iv) the shared medical affairs activities that we and AstraZeneca were to perform.

We determined that we had a vendor-customer relationship within the scope of ASC Topic 606, *Revenue from Contracts with Customers*, or ASC 606, for the license we granted to AstraZeneca and as a result we had one performance obligation. For our sole performance obligation, we determined the transaction price was the $200 million upfront payment we received. We recognized the upfront payment in full in 2021 because we did not have any remaining performance obligations after we delivered the license to AstraZeneca.

We also concluded that the shared development, commercialization and medical affairs activities are within the scope of ASC 808 because we and AstraZeneca are active participants exposed to the risks and benefits of the activities under the collaboration and therefore do not have a vendor-customer relationship. From inception through December 31, 2025, AstraZeneca was responsible for 55 percent of the costs associated with the ongoing global Phase 3 development program. Beginning on January 1, 2026, AstraZeneca was responsible for 75 percent of costs for development activities intended solely to support U.S. regulatory approvals and 87.5 percent of costs for development activities intended to support global regulatory approvals. Because we were leading the Phase 3 development program, we made an accounting policy election to recognize as non-customer revenue the cost-share funding from AstraZeneca, net of our share of AstraZeneca's development expenses, in the same period we incurred the related development expenses. As AstraZeneca was responsible for the majority of the commercial and medical affairs costs in the U.S. and all costs associated with bringing WAINUA to market outside the U.S., we made an accounting policy election to recognize cost-share funding we received from AstraZeneca related to commercial and medical affairs activities as reductions of our selling, general and administrative, or SG&A, expense and R&D expense, respectively.

In June 2026, we exercised our right to opt-out of the shared responsibility and costs for development and U.S. commercialization activities under the agreement. The opt-out became effective on August 1, 2026. Effective August 1, 2026, AstraZeneca is responsible for 100 percent of WAINUA costs under this agreement. We concluded that the development activities we perform and related cost reimbursements we receive from AstraZeneca after the opt-out are within the scope of ASC 606 because we determined AstraZeneca is our customer for the remaining R&D services performance obligation under this collaboration. As a result, we are recognizing cost funding from AstraZeneca related to development expenses incurred after the opt-out as collaborative agreement revenue.

In connection with the opt-out, certain additional pre-opt-out expenses are reimbursable from AstraZeneca. As of September 30, 2026, these amounts were constrained and no amounts have been recognized in the financial statements.

**5. Collaborative Arrangements and Licensing Agreements**

Below, we have included our AstraZeneca, Biogen, GSK, Novartis, Ono, Otsuka, Recordati and Roche collaborations, which were the collaborations that had either substantive changes or were new from those included in Part IV, Item 15, Note 4, *Collaborative Arrangements and Licensing Agreements*, of our audited financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2025.

**AstraZeneca**

We have two collaborations with AstraZeneca: one focused on the development and commercialization of WAINUA and one focused on the treatment of cardiovascular, renal and metabolic diseases. From inception through September 30, 2026, we have received approximately $1.1 billion from these collaborations.

In July 2026, we and AstraZeneca announced that the CARDIO-TTRansform trial for eplontersen in patients with ATTR-CM missed the primary efficacy endpoint of the composite outcome of cardiovascular, or CV, mortality and recurrent CV clinical events up to Week 140 compared with placebo. In this contemporary patient population treated with standard of care, including a majority on a stabilizer, adding eplontersen did not provide a statistically significant benefit. In June 2026, we exercised our opt-out right under the agreement. Refer to Note 4, *Revenues*, for further details on the opt-out.

During the three and nine months ended September 30, 2026 and 2025, we earned the following revenue from our relationship with AstraZeneca (in thousands, except percentage amounts):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue from our relationship with AstraZeneca | $ 21,507 | $ 27,128 | $ 82,463 | $ 101,705 |
| Percentage of total revenue | 9% | 17% | 11% | 14% |

We did not have any deferred revenue from our relationship with AstraZeneca at September 30, 2026 and December 31, 2025.

**Biogen**

We have multiple collaborations with Biogen focused on using antisense technology to advance the treatment of neurological disorders, including our 2017 spinal muscular atrophy, or SMA, collaboration and 2018 neurology collaboration.

In 2017, we entered into a collaboration agreement with Biogen to identify new antisense medicines for the treatment of SMA. In 2021, Biogen exercised its option to license salanersen, a drug we discovered under this collaboration.

In the second quarter of 2026, we earned a $45 million milestone payment when Biogen initiated a Phase 3 trial of salanersen for SMA under this collaboration. We recognized this milestone payment as R&D revenue in full in the second quarter of 2026 because we did not have any remaining performance obligations related to the milestone payment. We will achieve the next payment of $55 million if Biogen achieves approval in a major market, which includes the U.S., Japan, the United Kingdom, Germany, France, Italy and Spain. From inception through September 30, 2026, we have received $130 million in payments under this collaboration.

Under our 2018 neurology collaboration, Biogen gained exclusive rights to the use of our antisense technology to develop therapies for certain neurological diseases and the option to license certain medicines resulting from this collaboration. If Biogen exercises its option to license a medicine, it will assume global development, regulatory and commercialization responsibilities and costs for that medicine.

In the second quarter of 2026, we earned a $15 million license fee payment when Biogen exercised its option to license an investigational candidate for the treatment of amyotrophic lateral sclerosis, or ALS, under this collaboration. We recognized this license fee payment as R&D revenue in full in the second quarter of 2026 because we did not have any remaining performance obligations related to this payment after we delivered the license to Biogen.

In the third quarter of 2026, we earned a $7.5 million milestone payment when Biogen advanced a program under this collaboration. We recognized this milestone payment as R&D revenue in full in the third quarter of 2026 because we did not have any remaining performance obligations related to the milestone payment. We will achieve the next payment of $15 million if Biogen licenses a program under this collaboration. From inception through September 30, 2026, we have received approximately $1.1 billion in payments under this collaboration, including payments to purchase our stock.

During the three and nine months ended September 30, 2026 and 2025, we earned the following revenue from our relationship with Biogen (in thousands, except percentage amounts):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue from our relationship with Biogen | $ 95,269 | $ 74,237 | $ 290,820 | $ 211,296 |
| Percentage of total revenue | 39% | 47% | 38% | 29% |

Our condensed consolidated balance sheets at September 30, 2026 and December 31, 2025 included deferred revenue of $104.5 million and $151.2 million, respectively, from our relationship with Biogen.



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**GSK**

In 2010, we entered into a collaboration with GSK using our antisense drug discovery platform to discover and develop new medicines against targets for serious and rare diseases, including infectious diseases. Under our collaboration, GSK is developing and commercializing HIBSAGO (bepirovirsen) for the treatment of chronic hepatitis B, or CHB, infection. In 2019, following positive Phase 2 results, GSK licensed our CHB program. GSK is responsible for all global development, regulatory and commercialization activities and costs for the CHB program.

In the second quarter of 2026, we amended our CHB collaboration agreement with GSK, resulting in increased milestone payments that we are eligible to receive under this collaboration and amended royalty terms that exclude net sales in China, Hong Kong and Macau. Under the amended agreement, we are eligible to receive more than $510 million, which is comprised of a $25 million license fee, up to $46.5 million in development milestone payments, up to $320 million in regulatory milestone payments and up to $120 million in sales milestone payments if GSK successfully develops and commercializes HIBSAGO. In addition, we are eligible to receive tiered royalties ranging from 10 to 12 percent on net sales of HIBSAGO worldwide, excluding China, Hong Kong and Macau. The amendments to the agreement did not change existing performance obligations or result in new performance obligations. Therefore, we did not record any adjustments to previously recognized revenue.

In the first quarter of 2026, we earned a $15 million milestone payment when the Japanese Ministry of Health, Labour and Welfare, or MHLW, accepted for review a New Drug Application, or NDA, filing for HIBSAGO. In addition, we earned a $15 million milestone payment when the European Medicines Agency, or EMA, accepted for review a Marketing Authorization Application, or MAA, filing for HIBSAGO. We recognized these milestone payments as R&D revenue in full in the first quarter of 2026 because we did not have any remaining performance obligations related to the milestone payments.

In the third quarter of 2026, we earned a $35 million milestone payment when the MHLW approved HIBSAGO for the treatment of CHB infection. We recognized this milestone payment as R&D revenue in full in the third quarter of 2026 because we did not have any remaining performance obligations related to the milestone payment. From inception through September 30, 2026, we have received more than $135 million in an upfront payment and other payments related to the CHB program.

During the three and nine months ended September 30, 2026 and 2025, we earned the following revenue from our relationship with GSK (in thousands, except percentage amounts):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue from our relationship with GSK | $ 35,000 | $ - | $ 65,000 | $ - |
| Percentage of total revenue | 14% | -% | 9% | -% |

We did not have any deferred revenue from our relationship with GSK at September 30, 2026 and December 31, 2025.

In October 2026, we achieved a $30 million milestone payment when the FDA approved HIBSAGO for the treatment of CHB infection. We will achieve the next payment of up to $35 million if HIBSAGO is approved in China.

**Novartis**

In 2017, we initiated a collaboration with Novartis to develop and commercialize pelacarsen. Novartis is responsible for conducting and funding development and regulatory activities for pelacarsen, including a global Phase 3 cardiovascular outcomes study that Novartis initiated in 2019. In September 2026, Novartis announced that the pelacarsen Phase 3 Lp(a)HORIZON study did not meet its primary endpoint of reducing the risk of cardiovascular events compared to placebo. From inception through September 30, 2026, we have received more than $275 million in payments under this collaboration.



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During the three and nine months ended September 30, 2026 and 2025, we earned the following revenue from our relationship with Novartis (in thousands, except percentage amounts):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue from our relationship with Novartis | $ - | $ 1,235 | $ 655 | $ 3,569 |
| Percentage of total revenue | -% | 1% | -% | -% |

We did not have any deferred revenue from our relationship with Novartis at September 30, 2026. Our consolidated balance sheet at December 31, 2025 included deferred revenue of $0.6 million from our relationship with Novartis.

**Ono**

In March 2025, we entered into an agreement with Ono Pharmaceutical Co., Ltd., or Ono, to develop and commercialize sapablursen, an investigational RNA-targeted medicine for the potential treatment of polycythemia vera, or PV, a rare and potentially life-threatening hematologic disease. We are responsible for completing the Phase 2 IMPRSSION study of sapablursen, including the ongoing extension period. Ono is solely responsible for subsequent development, regulatory filings and commercialization of sapablursen.

In the second quarter of 2026, we earned a $20 million milestone payment when Ono initiated a pivotal clinical trial for sapablursen under this collaboration. We recognized this milestone payment as R&D revenue in full in the second quarter of 2026 because we did not have any remaining performance obligations related to the milestone payment. We will achieve the next payment of $15 million if the FDA accepts a New Drug Application, or NDA, filing for sapablursen in the U.S. From inception through September 30, 2026, we have received more than $305 million in payments from Ono.

During the three and nine months ended September 30, 2026 and 2025, we earned the following revenue from our relationship with Ono (in thousands, except percentage amounts):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue from our relationship with Ono | $ 719 | $ 2,979 | $ 24,525 | $ 282,979 |
| Percentage of total revenue | -% | 2% | 3% | 38% |

We did not have any deferred revenue from our relationship with Ono at September 30, 2026. Our consolidated balance sheet at December 31, 2025 included deferred revenue of $2.9 million from our relationship with Ono.

**Otsuka**

In 2023, we entered into an agreement with Otsuka Pharmaceutical Co., Ltd., or Otsuka, to commercialize DAWNZERA in Europe. In the second quarter of 2024, we expanded the agreement to include commercialization rights for DAWNZERA in the Asia-Pacific region. We are responsible for the ongoing development of DAWNZERA. We retained the rights to commercialize DAWNZERA in the U.S. and in the rest of the world, assuming regulatory approval. In November 2024, we entered into an agreement with Otsuka to commercialize ulefnersen, an investigational medicine for the treatment of ALS, caused by mutations in the *FUS* gene, worldwide. We are responsible for the ongoing development of ulefnersen.

In the first quarter of 2026, we achieved a $15 million milestone payment when the European Commission approved DAWNZERA in the EU. We recognized this milestone payment as R&D revenue in full in the first quarter of 2026 because we did not have any remaining performance obligations related to the milestone payment. We will achieve the next payment of $20 million if Otsuka receives reimbursement approval in three of the five major European countries, which include the United Kingdom, France, Germany, Italy and Spain. From inception through September 30, 2026, we have received more than $140 million in payments from Otsuka.



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During the three and nine months ended September 30, 2026 and 2025, we earned the following revenue from our relationship with Otsuka (in thousands, except percentage amounts):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue from our relationship with Otsuka | $ 6,665 | $ 3,980 | $ 35,984 | $ 15,433 |
| Percentage of total revenue | 3% | 3% | 5% | 2% |

Our condensed consolidated balance sheets at September 30, 2026 and December 31, 2025 included deferred revenue of $1.7 million and $4.3 million, respectively, from our relationship with Otsuka.

**Recordati**

In June 2026, we entered into an agreement with Recordati AG., or Recordati, to commercialize zilganersen for the treatment of Alexander disease, or AxD, in countries outside of the U.S. We are responsible for the ongoing development of zilganersen globally. We retained the rights to commercialize zilganersen in the U.S., assuming regulatory approval. Recordati is responsible for regulatory filings and commercialization outside the U.S., including country-specific support for early access pathways based on local regulations and access dynamics.

Over the term of this collaboration, we are eligible to receive up to $75 million, which is comprised of a $30 million upfront payment, up to $15 million in regulatory milestone payments and up to $30 million in sales milestone payments. In addition, we are eligible to receive tiered royalties of up to the mid-20 percent range on net sales. We are also eligible to receive reimbursements for clinical development costs that we incur outside the U.S. after March 2028. We will achieve the

next payment of up to $10 million if zilganersen is approved in a country outside of the U.S. From inception through September 30, 2026, we have received the $30 million upfront payment from Recordati.

At inception, we identified two performance obligations under this agreement, comprised of our license of zilganersen to Recordati and R&D services for zilganersen. We determined the transaction price to be the $30 million upfront payment. We allocated the transaction price based on the estimated stand-alone selling price of each performance obligation as follows:

- $21.0 million for the license of zilganersen; and
- $9.0 million for the R&D services for zilganersen.

We recognized $21.0 million of R&D revenue for the license of zilganersen in the second quarter of 2026 because we completed the performance obligation when we delivered the license to Recordati. We are recognizing revenue for our R&D services performance obligation relative to our total effort expected to satisfy our performance obligation. We currently estimate we will satisfy our performance obligation in the second quarter of 2029. In addition, we will recognize reimbursements for clinical development costs as R&D revenue in the period that we incur the costs.

During the three and nine months ended September 30, 2026 and 2025, we earned the following revenue from our relationship with Recordati (in thousands, except percentage amounts):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue from our relationship with Recordati | $ 705 | $ - | $ 21,802 | $ - |
| Percentage of total revenue | -% | -% | 3% | -% |

Our condensed consolidated balance sheet at September 30, 2026 included deferred revenue of $8.2 million from our relationship with Recordati.



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**Roche**

In 2018, we entered into a collaboration agreement with Hoffmann-La Roche Inc and F. Hoffmann-La Roche Ltd, collectively Roche, to develop sefaxersen for the treatment of complement-mediated diseases. In 2022, Roche exercised its right to exclusively develop and commercialize sefaxersen.

In the third quarter of 2026, we earned a $23.5 million milestone payment when Roche advanced the Phase 3 IMAgINATION study of sefaxersen for the treatment of IgAN. We recognized this milestone payment as R&D revenue in full in the third quarter of 2026 because we did not have any remaining performance obligations related to the milestone payment. We will achieve the next payment of $15 million if the FDA accepts an NDA filing for sefaxersen.

In 2023, we entered into an agreement with Roche to develop RNA-targeted programs for Alzheimer's disease, or AD, and Huntington's disease, or HD.

In the first quarter of 2026, we earned a $50 million milestone payment when Roche initiated a Phase 1 trial for an investigational medicine for the treatment of AD. We recognized this milestone payment as R&D revenue in full in the first quarter of 2026 because we did not have any remaining performance obligations related to the milestone payment. In the third quarter of 2026, we received a termination notice from Roche for this collaboration that became effective in November 2026.

In 2013, we entered into an agreement with Roche to develop treatments for Huntington's disease, or HD. In the third quarter of 2026, we received a termination notice from Roche for this collaboration that became effective in October 2026.

From inception through September 30, 2026, we have received more than $430 million in payments from our Roche collaborations.

During the three and nine months ended September 30, 2026 and 2025, we earned the following revenue from our relationship with Roche (in thousands, except percentage amounts):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue from our relationship with Roche | $ 23,500 | $ 2,618 | $ 73,500 | $ 6,986 |
| Percentage of total revenue | 10% | 2% | 10% | 1% |

We did not have any deferred revenue from our relationship with Roche at September 30, 2026 and December 31, 2025.

## 6. Basic and Diluted Net Loss Per Share

**Basic net loss per share**

We calculated our basic net loss per share for the three and nine months ended September 30, 2026 and 2025 by dividing our net loss by our weighted-average number of common shares outstanding during the period.

**Diluted net loss per share**

For the three and nine months ended September 30, 2026 and 2025, we incurred a net loss; therefore, we did not include dilutive common equivalent shares in the computation of diluted net loss per share because the effect would have been anti-dilutive. Common stock from the following would have had an anti-dilutive effect on net loss per share:

- 1.75 percent convertible senior notes due 2028, or 1.75% Notes due 2028;
- Warrants related to the 0% Notes due 2026;
- Dilutive stock options;
- Unvested restricted stock units, or RSUs;
- Unvested performance restricted stock units, or PRSUs; and
- Employee Stock Purchase Plan, or ESPP.



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For the three and nine months ended September 30, 2026, common stock underlying the 0 percent convertible senior notes due 2030, or 0% Notes due 2030, would also have had an anti-dilutive effect on net loss per share. For the three and nine months ended September 30, 2025, common stock underlying the 0 percent convertible senior notes due 2026, or 0% Notes due 2026, and the related note hedges would also have had an anti-dilutive effect on net loss per share.

## 7. Investments

The following table summarizes the contract maturity of the available-for-sale securities we held as of September 30, 2026:

| | |
|---|---|
| One year or less | 66% |
| After one year but within two years | 26% |
| After two years but within three and a half years | 8% |
| Total | 100% |

As illustrated above, at September 30, 2026, 92 percent of our available-for-sale securities had a maturity of less than two years.

All of our available-for-sale debt securities are available to us for use in our current operations. As a result, we categorize all of these securities as current assets even though the stated maturity of some individual securities may be one year or more beyond the balance sheet date.

We invest in debt securities with strong credit ratings and an investment grade rating at or above A-1, P-1 or F-1 by Standard & Poor's, Moody's or Fitch, respectively.

At September 30, 2026, we had an equity ownership interest of less than 20 percent in four private companies and four public companies with which we conduct business.

The following is a summary of our investments (in thousands):

| September 30, 2026 | Amortized Cost | Gross Unrealized Gains | Gross Unrealized Losses | Estimated Fair Value |
|---|---|---|---|---|
| Available-for-sale debt securities: | | | | |
| Corporate debt securities (1) | $ 598,983 | $ 84 | $ (1,275) | $ 597,792 |
| Debt securities issued by U.S. government agencies | 55,151 | 3 | (252) | 54,902 |
| Debt securities issued by the U.S. Treasury (1) | 415,527 | 8 | (1,027) | 414,508 |
| Debt securities issued by states of the U.S. and political subdivisions of the states | 4,165 | - | (16) | 4,149 |
| Total debt securities with a maturity of one year or less | 1,073,826 | 95 | (2,570) | 1,071,351 |
| Corporate debt securities | 320,994 | 30 | (4,120) | 316,904 |
| Debt securities issued by U.S. government agencies | 94,803 | - | (1,857) | 92,946 |
| Debt securities issued by the U.S. Treasury | 153,024 | - | (1,946) | 151,078 |
| Total debt securities with a maturity of more than one year | 568,821 | 30 | (7,923) | 560,928 |
| Total available-for-sale debt securities | $ 1,642,647 | $ 125 | $ (10,493) | $ 1,632,279 |
| Equity securities: | | | | |
| Publicly traded equity securities included in other current assets (2) | $ 11,897 | $ 55,437 | $ (10,055) | $ 57,279 |
| Privately held equity securities included in deposits and other assets (3) | 10,000 | 9,816 | - | 19,816 |
| Total equity securities | 21,897 | 65,253 | (10,055) | 77,095 |
| Total available-for-sale debt and equity securities | $ 1,664,544 | $ 65,378 | $ (20,548) | $ 1,709,374 |



| December 31, 2025 | Amortized Cost | Gross Unrealized Gains | Gross Unrealized Losses | Estimated Fair Value |
|---|---|---|---|---|
| Available-for-sale debt securities: | | | | |
| Corporate debt securities (1) | $ 746,814 | $ 991 | $ (27) | $ 747,778 |
| Debt securities issued by U.S. government agencies | 55,768 | 92 | (5) | 55,855 |
| Debt securities issued by the U.S. Treasury (1) | 769,034 | 843 | (13) | 769,864 |
| Debt securities issued by states of the U.S. and political subdivisions of the states | 5,709 | 11 | - | 5,720 |
| Total debt securities with a maturity of one year or less | 1,577,325 | 1,937 | (45) | 1,579,217 |
| Corporate debt securities | 435,350 | 1,586 | (106) | 436,830 |
| Debt securities issued by U.S. government agencies | 92,770 | 100 | (94) | 92,776 |
| Debt securities issued by the U.S. Treasury | 242,288 | 595 | (1) | 242,882 |
| Other municipal debt securities | 1,219 | 4 | - | 1,223 |
| Total debt securities with a maturity of more than one year | 771,627 | 2,285 | (201) | 773,711 |
| Total available-for-sale debt securities | $ 2,348,952 | $ 4,222 | $ (246) | $ 2,352,928 |
| Equity securities: | | | | |
| Publicly traded equity securities included in other current assets (2) | $ 11,897 | $ 35 | $ (8,920) | $ 3,012 |
| Privately held equity securities included in deposits and other assets (3) (2) | 4,905 | 54,395 | (7,091) | 52,209 |
| Total equity securities | 16,802 | 54,430 | (16,011) | 55,221 |
| Total available-for-sale debt and equity securities | $ 2,365,754 | $ 58,652 | $ (16,257) | $ 2,408,149 |

(1) Includes investments classified as cash equivalents in our condensed consolidated balance sheets.

(2) Our publicly traded equity securities are included in other current assets. We recognize publicly traded equity securities at fair value. In the first quarter of 2026, one of our privately held investees became a publicly traded entity after completing an initial public offering. As a result, we recorded a $23.4 million unrealized gain in our condensed consolidated statements of operations in the first quarter of 2026, which reflected the difference between the carrying value of this investment as of December 31, 2025 and its fair value of $55.8 million as of March 31, 2026. In the third quarter of 2026, we recorded an unrealized gain of $9.8 million, which reflected the difference between the carrying value of this investment as of June 30, 2026 and its fair value of $55.4 million as of September 30, 2026. This investment is subject to a 12-month contractual sale restriction that ends in January 2027. In the nine months ended September 30, 2026, we recorded a $1.1 million net unrealized loss in our condensed consolidated statements of operations related to changes in the fair value of our other investments in publicly traded companies.

(3) Our privately held equity securities are included in deposits and other assets. We recognize our privately held equity securities at cost minus impairments, plus or minus changes resulting from observable price changes in orderly transactions for the identical or similar investment of the same issuer, which are Level 3 inputs. In the nine months ended September 30, 2026, there were no changes to the carrying value of our privately held equity securities.

The following is a summary of our investments we consider to be temporarily impaired at September 30, 2026 (in thousands, except for number of investments):

| | Number of Investments | Less than 12 Months of Temporary Impairment | | More than 12 Months of Temporary Impairment | | Total Temporary Impairment | |
|---|---|---|---|---|---|---|---|
| | | Estimated Fair Value | Unrealized Losses | Estimated Fair Value | Unrealized Losses | Estimated Fair Value | Unrealized Losses |
| Corporate debt securities | 409 | $ 814,052 | $ (5,343) | $ 5,924 | $ (52) | $ 819,976 | $ (5,395) |
| Debt securities issued by U.S. government agencies | 64 | 127,901 | (2,077) | 2,826 | (32) | 130,727 | (2,109) |
| Debt securities issued by the U.S. Treasury | 86 | 531,707 | (2,973) | - | - | 531,707 | (2,973) |
| Debt securities issued by states of the U.S. and political subdivisions of the states | 4 | 3,359 | (16) | - | - | 3,359 | (16) |
| Total temporarily impaired debt securities | 563 | $ 1,477,019 | $ (10,409) | $ 8,750 | $ (84) | $ 1,485,769 | $ (10,493) |

We believe that the decline in value of these securities is temporary and is primarily related to the change in market interest rates since purchase rather than underlying credit deterioration for any of the issuers. We believe it is more likely than not that we will be able to hold our debt securities with declines in value to maturity. Therefore, we intend to hold these securities to maturity and anticipate full recovery of our debt securities' amortized cost basis at maturity.

**8. Fair Value Measurements**

The following tables present the major security types we held at September 30, 2026 and December 31, 2025 that we regularly measure and carry at fair value. The following tables segregate each security type by the level within the fair value hierarchy of the valuation techniques we utilized to determine the respective security's fair value (in thousands):

| | At September 30, 2026 | Quoted Prices in Active Markets (Level 1) | Significant Other Observable Inputs (Level 2) |
|---|---|---|---|
| Cash equivalents (1) | $ 146,829 | $ 146,829 | $ - |
| Corporate debt securities (2) | 914,696 | - | 914,696 |
| Debt securities issued by U.S. government agencies (3) | 147,848 | - | 147,848 |
| Debt securities issued by the U.S. Treasury (4) | 565,586 | 565,586 | - |
| Debt securities issued by states of the U.S. and political subdivisions of the states (3) | 4,149 | - | 4,149 |
| Publicly traded equity securities included in other current assets (5) | 57,279 | 57,279 | - |
| Total | $ 1,836,387 | $ 769,694 | $ 1,066,693 |



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| | At December 31, 2025 | Quoted Prices in Active Markets (Level 1) | Significant Other Observable Inputs (Level 2) |
|---|---|---|---|
| Cash equivalents (1) | $ 213,579 | $ 213,579 | $ - |
| Corporate debt securities (6) | 1,184,608 | - | 1,184,608 |
| Debt securities issued by U.S. government agencies (3) | 148,631 | - | 148,631 |
| Debt securities issued by the U.S. Treasury (3) | 1,012,746 | 1,012,746 | - |
| Debt securities issued by states of the U.S. and political subdivisions of the states (3) | 6,943 | - | 6,943 |
| Publicly traded equity securities included in other current assets (5) | 3,012 | 3,012 | - |
| Total | $ 2,569,519 | $ 1,229,337 | $ 1,340,182 |

The following footnotes reference lines in our condensed consolidated balance sheets:

(1) Included in cash and cash equivalents.

(2) $33.8 million was included in cash and cash equivalents, with the difference included in short-term investments.

(3) Included in short-term investments.

(4) $10.9 million was included in cash and cash equivalents, with the difference included in short-term investments.

(5) Included in other current assets.

(6) $47.8 million was included in cash and cash equivalents, with the difference included in short-term investments.

**Convertible Notes**

Our 0% Notes due 2030 and 1.75% Notes due 2028 had a fair value of $635.7 million and $633.1 million at September 30, 2026, respectively. Our 0% Notes due 2030, 1.75% Notes due 2028 and 0% Notes due 2026 had a fair value of $830.3 million, $918.1 million and $594.6 million at December 31, 2025, respectively. We determine the fair value of our notes based on quoted market prices for these notes, which are Level 2 measurements because the notes do not trade regularly.

**9. Stock-based Compensation Expense**

The following table summarizes stock-based compensation expense for the three and nine months ended September 30, 2026 and 2025 (in thousands):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |

| | | | | |
|---|---|---|---|---|
| Cost of sales | $ 193 | $ 145 | $ 516 | $ 855 |
| Research, development and patent expense | 24,399 | 20,757 | 74,203 | 60,597 |
| Selling, general and administrative expense | 18,832 | 10,244 | 57,575 | 29,102 |
| Stock-based compensation expense, net of amounts capitalized | 43,424 | 31,146 | 132,294 | 90,554 |
| Capitalized stock-based compensation expense | 538 | 435 | 556 | 1,435 |
| Total stock-based compensation expense | $ 43,962 | $ 31,581 | $ 132,850 | $ 91,989 |





As of September 30, 2026, total unrecognized estimated stock-based compensation expense related to non-vested stock options, RSUs and PRSUs was $47.6 million, $138.7 million and $20.6 million, respectively. Our actual expenses will likely differ from these estimates because we will adjust our unrecognized stock-based compensation expense for future forfeitures, including any PRSUs that do not vest. We expect to recognize the cost of stock-based compensation expense related to our non-vested stock options, RSUs and PRSUs over a weighted average amortization period of 1.1 years, 1.4 years and 1.4 years, respectively.

**Stock Options:**

The weighted-average grant date fair value of stock options granted to employees for the nine months ended September 30, 2026 and 2025 was $37.74 and $17.21 per share, respectively. The weighted-average grant date fair value of stock options granted to non-employee directors for the nine months ended September 30, 2026 and 2025 was $39.97 and $20.86 per share, respectively.

In the second quarter of 2026, two new members were appointed to the Board of Directors following the retirement of two Board members. In June 2026, we issued stock options to the two new Board members.

**RSUs:**

The weighted-average grant date fair value of RSUs granted to employees for the nine months ended September 30, 2026 and 2025 was $76.30 and $33.78 per share, respectively. The weighted-average grant date fair value of RSUs granted to non-employee directors for the nine months ended September 30, 2026 and 2025 was $71.93 and $33.78 per share, respectively.

**PRSUs:**

Under the terms of the PRSUs we granted in 2026 and 2025, the PRSUs may vest at the end of the three-year performance period based on our relative total shareholder return, or TSR, as compared to a peer group of companies and as measured at the end of the performance period. Under the terms of the grants, no number of PRSUs is guaranteed to vest and the actual number of PRSUs that will vest at the end of each performance period may be anywhere from zero to 200 percent of the target number depending on our relative TSR.

The weighted-average grant date fair value of PRSUs we granted to our executive officers for the nine months ended September 30, 2026 and 2025 was $115.05 and $48.81 per share, respectively.

**Black-Scholes Assumptions:**

For the nine months ended September 30, 2026 and 2025, we used the following weighted-average assumptions in our Black-Scholes calculations:

*Employee Stock Options:*

| | Nine Months Ended September 30, | |
|---|---|---|
| | **2026** | **2025** |
| Risk-free interest rate | 4.0% | 4.4% |
| Dividend yield | 0.0% | 0.0% |
| Volatility | 43.1% | 42.1% |
| Expected life | 6.3 years | 6.3 years |





*Board of Directors Stock Options:*

| | Nine Months Ended September 30, | |
|---|---|---|
| | **2026** | **2025** |
| Risk-free interest rate | 4.4% | 4.0% |
| Dividend yield | 0.0% | 0.0% |
| Volatility | 42.0% | 43.0% |
| Expected life | 7.2 years | 7.4 years |

*ESPP:*

| | Nine Months Ended September 30, | |
|---|---|---|
| | **2026** | **2025** |
| Risk-free interest rate | 3.7% | 4.2% |
| Dividend yield | 0.0% | 0.0% |
| Volatility | 51.5% | 48.2% |
| Expected life | 6 months | 6 months |

**10. Liability Related to Sale of Future Royalties**

In 2023, we entered into a royalty purchase agreement with Royalty Pharma Investments, or Royalty Pharma, to monetize a portion of our future SPINRAZA and pelacarsen royalties we are entitled to under our arrangements with Biogen and Novartis, respectively. As a result, we received an upfront payment of $500 million and we are eligible to receive up to $625 million in additional milestone payments. Under the terms of the agreement, Royalty Pharma will receive 25 percent of our SPINRAZA royalty payments from 2023 through 2027, increasing to 45 percent of royalty payments in 2028, on up to $1.5 billion in annual sales. In addition, Royalty

Pharma is eligible to receive 25 percent of any future royalty payments on pelacarsen, our medicine in development to treat patients with elevated lipoprotein(a)-driven cardiovascular disease. Royalty Pharma's royalty interest in SPINRAZA will revert to us after total SPINRAZA royalty payments to Royalty Pharma reach either $475 million or $550 million, depending on the timing and occurrence of FDA approval of pelacarsen.

We recorded the upfront payment of $500 million as a liability related to the sale of future royalties, net of transaction costs of $10.4 million, which we are amortizing over the estimated life of the arrangement using the effective interest rate method. We recognize royalty revenue in the period in which the counterparty sells the related product and recognizes the related revenue. We record royalty payments made to Royalty Pharma as a reduction of the liability. From inception through September 30, 2026, we have paid Royalty Pharma approximately $178.0 million under this arrangement.

We determine the effective interest rate used to record interest expense under this agreement based on an estimate of future royalty payments to Royalty Pharma. As of September 30, 2026 and 2025, the estimated effective interest rate under the agreement was 10.0 percent and 12.4 percent, respectively.

In September 2026, Novartis announced that the pelacarsen Phase 3 Lp(a)HORIZON study did not meet its primary endpoint of reducing the risk of cardiovascular events compared to placebo. As a result, we no longer expect the FDA approval of pelacarsen and changed our estimate of future pelacarsen royalty payments to zero and total SPINRAZA royalty payments payable to Royalty Pharma from $475 million to $550 million. We accounted for this change in estimate using the prospective interest method by recalculating the effective interest rate based on the carrying amount and the revised estimated future payments to Royalty Pharma as of September 2026. The revised estimated future payments was less than the net carrying amount of our liability. As a result, we began recognizing contra-interest expense over the remaining term of the Royalty Pharma arrangement. This reflects the reversal of previously recognized interest expense that is greater than the updated estimate of total interest expense that we will recognize over the term of the arrangement.



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The following table sets forth information on our liability related to sale of future royalties (in thousands):

| | | |
|---|---|---|
| Liability related to sale of future royalties, net as of December 31, 2025 | $ | 563,042 |
| Royalty payments to Royalty Pharma | | (35,986) |
| Interest expense related to sale of future royalties | | 38,427 |
| Amortization of issuance costs related to sale of future royalties | | 545 |
| Liability related to sale of future royalties, net as of September 30, 2026 | $ | 566,028 |
| Less: Current portion, net (1) | | (138,188) |
| Liability related to sale of future royalties, net as of September 30, 2026 – Non-current | $ | 427,840 |

(1) The current portion represents the estimated reduction in the liability balance over the next twelve months after September 30, 2026, which includes estimated royalty payments to Royalty Pharma and estimated contra-interest expense.

There are numerous factors, most of which are not within our control, that could materially impact the amount and timing of royalty payments from Biogen, and result in changes to our estimate of future royalty payments to Royalty Pharma. Such factors include, but are not limited to, the commercial sales of SPINRAZA, competing products or other significant events.

## 11. Convertible Debt

### 0 Percent Convertible Senior Notes due 2030

In November 2025, we completed a $770.0 million offering of our 0% Notes due 2030.

At September 30, 2026, we had the following 0% Notes due 2030 outstanding (in millions except interest rate and price per share data):

| | | 0% Notes due 2030 |
|---|---|---|
| Outstanding principal balance | $ | 770.0 |
| Unamortized debt issuance costs | $ | 15.7 |
| Maturity date | | December 2030 |
| Interest rate | | 0% |
| Effective interest rate | | 0.5% |
| Conversion price per share | $ | 98.10 |
| Total shares of common stock subject to conversion | | 7.8 |

### 1.75 Percent Convertible Senior Notes due 2028

In 2023, we completed a $575.0 million offering of our 1.75% Notes due 2028.

At September 30, 2026, we had the following 1.75% Notes due 2028 outstanding (in millions except interest rate and price per share data):

| | | 1.75% Notes due 2028 |
|---|---|---|
| Outstanding principal balance | $ | 575.0 |
| Unamortized debt issuance costs | $ | 5.0 |
| Maturity date | | June 2028 |
| Interest rate | | 1.75% |
| Effective interest rate | | 2.3% |
| Conversion price per share | $ | 53.73 |
| Total shares of common stock subject to conversion | | 10.7 |



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### 0 Percent Convertible Senior Notes due 2026 and Call Spread

In April 2026, we paid the remaining principal balance of our 0% Notes due 2026 with $432.5 million of cash at maturity. In addition, we settled the conversion obligation in excess of principal by issuing 1.8 million shares of common stock to the holders of the 0% Notes due 2026 who exercised their conversion option.

In conjunction with the 2021 offering, we entered into a call spread transaction, which was comprised of purchasing note hedges and selling warrants, to minimize the impact of potential economic dilution upon conversion of our 0% Notes due 2026 by increasing the effective conversion price on these notes. We increased our effective conversion price to $76.39 with the same number of underlying shares as our 0% Notes due 2026. Our note hedges were exercisable upon conversion of the 0% Notes due 2026. In April 2026, we exercised the note hedges upon maturity of these notes. As a result, we received 2.6 million shares of common

stock, which we retired upon receipt. In the three and nine months ended September 30, 2026, we issued 0.1 million shares in relation to warrant exercises. The warrants fully expired in September 2026.

Upon the execution of the call spread transaction in 2021, we recorded the amount we paid for the note hedges and the amount we received for the warrants in additional paid-in capital in our condensed consolidated balance sheets. Refer to Part IV, Item 15, Note 1, *Organization and Significant Accounting Policies*, of our audited financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2025 for our Call Spread accounting policy. We reassess our ability to continue to classify the warrants in shareholders' equity at each reporting period.

**Other Terms of Convertible Senior Notes**

The 0% Notes due 2030 and 1.75% Notes due 2028 are convertible under certain conditions, at the option of the note holders. We can settle conversions of the notes, at our election, in cash, shares of our common stock or a combination of both. We may not redeem the notes prior to maturity, and we do not have to provide a sinking fund for them. Holders of the notes may require us to purchase some or all of their notes upon the occurrence of certain fundamental changes, as set forth in the indentures governing the notes, at a purchase price equal to 100 percent of the principal amount of the notes to be purchased, plus any accrued and unpaid interest. The 0% Notes due 2026 were subject to similar terms.

**12. Legal Proceedings**

From time to time, we are involved in legal proceedings arising in the ordinary course of our business. Periodically, we evaluate the status of each legal matter and assess our potential financial exposure. If we consider the potential loss from any legal proceeding to be probable and we can reasonably estimate the amount, we accrue a liability for the estimated loss. The outcome of any proceeding is not determinable in advance. Therefore, we are required to use significant judgment to determine the probability of a loss and whether the amount of the loss is reasonably estimable. Our assessment of a potential liability and the amount of accruals we recorded are based only on the information available to us at the time. As additional information becomes available, we reassess the potential liability related to the legal proceeding and may revise our estimates.

On September 11, 2025, we sued Arrowhead Pharmaceuticals, Inc., in the Central District of California asserting that Arrowhead's announced intention to commercialize plozasiran in November 2025 would infringe our patent US9,593,333. Arrowhead is now commercializing plozasiran and the lawsuit is ongoing. Arrowhead has filed its Answer to our Complaint and Counterclaims asserting that our patent US9,593,333 is invalid or not infringed by use of plozasiran.

On June 1, 2026, Biogen received notice that Somerset Therapeutics, LLC had filed an Abbreviated New Drug Application, or ANDA, seeking approval to commercialize a generic version of SPINRAZA intrathecal injection, 12 mg/5 ml. The ANDA alleged that certain patents that cover SPINRAZA and its use are invalid or would not be infringed by Somerset. On June 22, 2026, Biogen, Cold Spring Harbor Laboratory and Ionis jointly filed a lawsuit in the District Court of Delaware asserting patent infringement. That proceeding has since been consolidated with two other ANDA proceedings directed to SPINRAZA: one initiated by Cipla LTD., and another initiated by Somerset listing different patents. The parties have filed their complaints, counterclaims and answers, and the consolidated lawsuit is ongoing.



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**13. Segment Information**

We operate as a single operating segment, Ionis operations, focused on the research, development and commercialization of our RNA-targeted medicines to bring better futures to people with serious diseases. The CODM, our Chief Executive Officer, manages our company, reviews operating results, assesses performance and allocates resources on an aggregate basis using consolidated net income or loss as the key measure of segment profit or loss. As such, results of our operations are reported on a consolidated basis for purposes of management and segment reporting.

Ionis operations derives its revenues from commercial and R&D revenue sources. Refer to Note 4, *Revenues*, for further details on our sources of revenue.

The following table sets forth information on segment profit or loss, including significant segment expenses (in thousands):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue | $ 242,721 | $ 156,719 | $ 756,762 | $ 740,381 |
| Less: | | | | |
| Cost of sales | 3,129 | 2,193 | 8,527 | 7,097 |
| Drug discovery | 28,904 | 28,412 | 86,581 | 85,656 |
| Drug development | 101,333 | 120,828 | 309,473 | 351,463 |
| Medical affairs | 11,453 | 8,874 | 32,760 | 22,342 |
| Manufacturing and development chemistry | 23,266 | 15,790 | 64,213 | 51,616 |
| R&D support | 26,523 | 23,092 | 75,928 | 64,252 |
| Selling, general and administrative | 135,389 | 86,565 | 397,401 | 234,626 |
| Other segment items (1) | 22,695 | (429) | 99,024 | 75,322 |
| Consolidated net loss | $ (109,971) | $ (128,606) | $ (317,145) | $ (151,993) |

(1) Other segment items include stock-based compensation expense, investment income, interest expense, gain or loss on investments, other income or expense and income tax expense or benefit.



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**ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

*In this Report on Form 10-Q, unless the context requires otherwise, "Ionis," the "Company," "we," "our," and "us," means Ionis Pharmaceuticals, Inc. and its subsidiaries.*

**Forward-Looking Statements**

**In addition to historical information contained in this Report on Form 10-Q, the Report includes forward-looking statements regarding our business and the therapeutic and commercial potential of our commercial medicines, additional medicines in development, technologies and our expectations regarding development and regulatory milestones. Any statement describing our goals, expectations, financial or other projections, intentions or beliefs is a forward-looking**

**statement and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties and particularly those inherent in the process of discovering, developing and commercializing medicines that are safe and effective for use as human therapeutics, and in the endeavor of building a business around such medicines. Our forward-looking statements also involve assumptions that, if they never materialize or prove correct, could cause our results to differ materially from those expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in this report and described in additional detail in our annual report on Form 10-K for the year ended December 31, 2025, which is on file with the U.S. Securities and Exchange Commission and is available from us, and those identified within Part II Item 1A, *Risk Factors*, of this Report. Although our forward-looking statements reflect the good faith judgment of our management, these statements are based only on facts and factors currently known by us. Except as required by law, we undertake no obligation to update any forward-looking statements for any reason. As a result, you are cautioned not to rely on these forward-looking statements.**

**Overview**

For three decades, we have invented medicines that bring better futures to people with serious diseases. As a pioneer in RNA-targeted medicines with a deep understanding of disease biology and an industry-leading drug discovery technology, we are driven to deliver innovative, life-changing advances for patients.

With multiple independent commercial launches now underway, we have transitioned into a fully integrated commercial-stage biotechnology company. We currently have nine marketed medicines to treat serious diseases, which include three Ionis-owned medicines: TRYNGOLZA (olezarsen), DAWNZERA (donidalorsen) and ZANVASTRO (zilganersen), and six partnered medicines: HIBSAGO (bepirovirsen), WAINUA (eplontersen), SPINRAZA (nusinersen), QALSODY (tofersen), TEGSEDI (inotersen) and WAYLIVRA (volanesorsen). Following approval by the U.S. Food and Drug Administration, or FDA, in June 2026, we independently launched TRYNGOLZA for the treatment of severe hypertriglyceridemia, or sHTG. In addition, we independently launched ZANVASTRO for the treatment of Alexander disease, or AxD, after receiving FDA approval in September 2026. Our partner, GSK, launched HIBSAGO for the treatment of chronic hepatitis B, or CHB, in Japan after receiving approval from the Ministry of Health, Labour and Welfare, or MHLW, in August 2026. HIBSAGO also received FDA approval in October 2026. We also have a rich innovative pipeline across our focus areas of neurology, cardiometabolic diseases and select areas of high patient needs. We currently have multiple medicines advancing in Phase 3 development, including obudanersen for Angelman syndrome, or AS, which is wholly owned and recently completed enrollment. In addition, our partnered medicines, ulefnersen and sefaxersen, recently delivered positive Phase 3 results. We also have additional medicines in early and mid-stage development.

Our multiple sources of revenue and solid financial foundation enable our continued investments to support ongoing and planned launches and to advance our wholly owned medicines in development. Our key recent achievements, combined with our independent and partnered product launches anticipated by the end of 2027, position us well to help millions of patients with serious diseases and deliver increasing product and royalty revenue.

*Our Marketed Medicines*

TRYNGOLZA is a once monthly, self-administered RNA-targeted medicine approved in the United States, or U.S., as an adjunct to diet to reduce triglycerides and the risk of acute pancreatitis in adults with sHTG and as an adjunct to diet to reduce triglycerides in adults with familial chylomicronemia syndrome, or FCS. TRYNGOLZA is the first and only treatment approved by the FDA that significantly and substantially reduces triglyceride levels in adults with sHTG and provides a clinically meaningful reduction in acute pancreatitis, or AP, events. TRYNGOLZA is also approved in the European Union, or EU, Canada and the United Kingdom, or UK, as an adjunct to diet in adult patients for the treatment of genetically confirmed FCS. TRYNGOLZA is the first medicine we began commercializing independently in the U.S. Sobi has exclusive rights to commercialize TRYNGOLZA in countries outside of the U.S., Canada and China.



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DAWNZERA is an RNA-targeted medicine approved in the U.S. for prophylaxis to prevent attacks of hereditary angioedema, or HAE, in adult and pediatric patients 12 years of age and older. DAWNZERA is the first and only FDA-approved RNA-targeted prophylactic therapy for HAE. DAWNZERA is also approved in the EU, UK and Canada for the routine prevention of recurrent attacks of HAE in the same age group. DAWNZERA is self-administered via subcutaneous autoinjector once every four or eight weeks. DAWNZERA has the potential to offer durable efficacy, a favorable safety and tolerability profile, and the longest available dosing interval. DAWNZERA is the second medicine we are commercializing independently in the U.S. We licensed commercialization rights for DAWNZERA in Europe and the Asia-Pacific region to Otsuka Pharmaceutical Co., Ltd., or Otsuka.

ZANVASTRO is an RNA-targeted medicine approved in the U.S. for the treatment of AxD in pediatric and adult patients. It is administered intrathecally every three months. ZANVASTRO is the first and only FDA-approved disease modifying treatment for AxD. ZANVASTRO is the third medicine we are commercializing independently in the U.S. We licensed commercialization rights for ZANVASTRO in countries outside of the U.S. to Recordati. ZANVASTRO was granted Orphan Drug designation from the European Medicines Agency, or EMA.

SPINRAZA is an antisense medicine for the treatment of patients with spinal muscular atrophy, or SMA, a progressive, debilitating and often fatal genetic disease. Higher dose SPINRAZA was approved and launched in the U.S., EU and Japan for the treatment of SMA. Higher dose SPINRAZA is also approved in the UK and Switzerland. Our partner, Biogen, is responsible for commercializing SPINRAZA worldwide.

HIBSAGO (bepirovirsen) is an RNA-targeted medicine approved in the U.S. and Japan for CHB virus infection in adult patients without cirrhosis receiving nucleos(t)ide analogue therapy and with hepatitis B virus, or HBV, surface antigen, or HBsAg, levels ≤3000 IU/ml as determined by an FDA-authorized test. It is a six-month finite treatment that can be administered at-home after the first dose. HIBSAGO offers unprecedented functional cure rates compared to current standard of care. Our partner, GSK, is responsible for commercializing HIBSAGO worldwide.

WAINUA (WAINZUA in Europe) is a once monthly, self-administered subcutaneous RNA-targeted medicine that is approved in numerous countries, including the U.S., EU, UK, Canada and China, for the treatment of adults with polyneuropathy of hereditary transthyretin-mediated amyloidosis, or ATTRv-PN, a debilitating, progressive, and fatal disease. In January 2024, we and AstraZeneca launched WAINUA in the U.S. for the treatment of adults with ATTRv-PN. The launch of WAINUA is underway in numerous countries, including the countries in the EU, following the approval by the European Commission, or EC, in March 2025. AstraZeneca is our commercialization partner for WAINUA.

QALSODY is an antisense medicine that received accelerated approval from the FDA in April 2023 and marketing authorization under exceptional circumstances from the EMA in May 2024 for the treatment of adult patients with superoxide dismutase 1 amyotrophic lateral sclerosis, or SOD1-ALS, a rare, neurodegenerative disorder that causes progressive loss of motor neurons leading to death. QALSODY was the first treatment approved to target a genetic cause of ALS. Our partner, Biogen, is responsible for commercializing QALSODY worldwide. Biogen is also evaluating QALSODY as a potential treatment for presymptomatic SOD1-ALS patients in the ongoing ATLAS study. QALSODY was granted Orphan Drug designation by the FDA and EMA.

TEGSEDI is a once weekly, self-administered subcutaneous medicine approved in Europe and Brazil for the treatment of patients with ATTRv-PN. We currently sell TEGSEDI in Europe through our distribution agreement with Swedish Orphan Biovitrum AB, or Sobi. In Latin America, PTC Therapeutics International Limited, or PTC, is commercializing TEGSEDI in Brazil and is pursuing access in additional Latin American countries through its exclusive license agreement with us.

WAYLIVRA is a once weekly, self-administered, subcutaneous medicine approved in Europe and Brazil as an adjunct to diet in adult patients with genetically confirmed FCS and at high risk for pancreatitis. We sell WAYLIVRA in Europe through our distribution agreement with Sobi. In Latin America, PTC is commercializing WAYLIVRA in Brazil for two indications, FCS and familial partial lipodystrophy, or FPL, and is pursuing access in additional Latin American countries through its

exclusive license agreement with us.



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*Our Innovative Late-Stage Pipeline of Investigational Medicines*

Obudanersen is our wholly owned medicine in development for AS. In July 2026, we completed enrollment of the Phase 3 study, REVEAL, which we designed to evaluate the efficacy and safety of obudanersen. In September 2026, we initiated the Phase 3 CHAMPION study in patients with AS due to paternal uniparental disomy or imprinting center defects. In addition, we are continuing to conduct the open label Phase 1/2 study, HALOS, of obudanersen in patients with AS designed to assess the safety, tolerability and activity of multiple ascending doses of obudanersen administered intrathecally. In 2025, we presented positive 12- and 18-month long-term extension data from the HALOS study which supports continued development. The FDA and EMA granted Orphan Drug designation to obudanersen. Additionally, the FDA granted Breakthrough Therapy, Fast Track and Rare Pediatric designations to obudanersen.

Eplontersen is our medicine in development to treat patients with transthyretin amyloidosis cardiomyopathy, or ATTR-CM. In July 2026, we and AstraZeneca announced that the CARDIO-TTRansform trial for eplontersen in patients with ATTR-CM missed the primary efficacy endpoint of the composite outcome of cardiovascular, or CV, mortality and recurrent CV clinical events up to Week 140 compared with placebo. In this contemporary patient population treated with standard of care, including a majority on a stabilizer, adding eplontersen did not provide a statistically significant benefit. AstraZeneca shared the results with the scientific community at the European Society of Cardiology, or ESC, Congress in August 2026 and is continuing to analyze the full data set.

Pelacarsen is our medicine in development to treat patients with elevated lipoprotein(a)-driven cardiovascular disease, or Lp(a)-driven CVD. In September 2026, Novartis announced that the pelacarsen Phase 3 Lp(a)HORIZON study did not meet its primary endpoint of reducing the risk of cardiovascular events compared to placebo. The full Lp(a)HORIZON data will be presented at the American Heart Association, or AHA, conference in November 2026.

Salanersen is our medicine in development for SMA. In the second quarter of 2026, Biogen advanced salanersen into Phase 3 development in patients with SMA and the FDA granted Breakthrough Therapy designation to salanersen based on positive interim Phase 1 results. Salanersen has also received Orphan Drug designation for the treatment of SMA.

Sapablursen is our medicine in development for polycythemia vera, or PV. In the second quarter of 2026, Ono advanced sapablursen into Phase 3 development in patients with PV. Sapablursen has received FDA Fast Track, Orphan Drug and Breakthrough Therapy designations for the treatment of PV.

Sefaxersen is our medicine in Phase 3 development for immunoglobulin A, or IgA, nephropathy, or IgAN. In September 2026, we and Roche announced positive interim data from the ongoing Phase 3 IMAgINATION study evaluating investigational sefaxersen in adults with primary IgAN, which were presented in October 2026 at the American Society of Nephrology, or ASN. Roche plans to share these data with health authorities.

Tofersen is our medicine in development for presymptomatic SOD1-ALS. Biogen is evaluating tofersen for treatment of presymptomatic individuals who have a *SOD1* genetic mutation.

Ulefnersen is our medicine in development for amyotrophic lateral sclerosis, or ALS, with mutations in the fused in sarcoma gene, or FUS. In September 2026, we and Otsuka announced positive topline results from the Phase 3 FUSION study of ulefnersen in juvenile and adult patients with FUS-ALS. We licensed global commercialization rights for ulefnersen to Otsuka. The FDA and EMA granted Orphan Drug designation to ulefnersen. The FDA also granted Fast Track designation to ulefnersen.

**Critical Accounting Estimates**

We prepare our condensed consolidated financial statements in conformity with accounting principles generally accepted in the U.S. As such, we make certain estimates, judgments and assumptions that we believe are reasonable, based upon the information available to us. These judgments involve making estimates about the effect of matters that are inherently uncertain and may significantly impact our quarterly or annual results of operations and financial condition. Each quarter, our senior management reviews the development, selection and disclosure of such estimates with the audit committee of our board of directors. The following are our significant accounting estimates, which we believe are the most critical to aid in fully understanding and evaluating our reported financial results:

- Assessing the propriety of revenue recognition and associated deferred revenue;
- Determining the appropriate cost estimates for unbilled preclinical studies and clinical development activities; and
- Assessing the appropriate estimate of anticipated future royalty payments under our royalty purchase agreement



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There have been no material changes to our critical accounting estimates from the information provided in Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations*, included in our Annual Report on Form 10-K for the year ended December 31, 2025.

**Results of Operations**

The following is a summary of our financial results (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Total revenue | $ 242.7 | $ 156.7 | $ 756.8 | $ 740.4 |
| Total operating expenses | $ 373.4 | $ 316.9 | $ 1,107.2 | $ 907.6 |
| Loss from operations | $ (130.7) | $ (160.2) | $ (350.4) | $ (167.2) |
| Net loss | $ (110.0) | $ (128.6) | $ (317.1) | $ (152.0) |

**Revenue**

Total revenue for the three and nine months ended September 30, 2026 was $242.7 million and $756.8 million, respectively, compared to $156.7 million and $740.4 million for the same periods in 2025 respectively, and was comprised of the following (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Revenue: | | | | |

| | | | | |
|---|---|---|---|---|
| Commercial revenue: | | | | |
| Product sales, net: | | | | |
| TRYNGOLZA sales, net | $ 9.3 | $ 31.8 | $ 41.0 | $ 57.4 |
| DAWNZERA sales, net | 36.8 | 0.7 | 79.2 | 0.7 |
| ZANVASTRO sales, net | 2.2 | - | 2.2 | - |
| Total product sales, net | 48.3 | 32.5 | 122.4 | 58.1 |
| Royalty revenue: | | | | |
| SPINRAZA royalties | 69.4 | 55.9 | 166.6 | 158.2 |
| WAINUA royalties | 6.8 | 13.3 | 34.0 | 33.1 |
| Other royalties | 4.4 | 6.5 | 14.3 | 18.5 |
| Total royalty revenue | 80.6 | 75.7 | 214.9 | 209.8 |
| Other commercial revenue | 7.3 | 7.4 | 25.4 | 26.6 |
| Total commercial revenue | 136.2 | 115.6 | 362.7 | 294.5 |
| Research and development revenue: | | | | |
| Collaborative agreement revenue | 102.8 | 31.4 | 356.5 | 413.4 |
| WAINUA joint development revenue | 3.7 | 9.7 | 37.6 | 32.5 |
| Total research and development revenue | 106.5 | 41.1 | 394.1 | 445.9 |
| Total revenue | $ 242.7 | $ 156.7 | $ 756.8 | $ 740.4 |



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Commercial revenue for the three months and nine months ended September 30, 2026 increased 18% and 23%, respectively, compared to the same periods in 2025. This increase was primarily driven by DAWNZERA product sales.

Research and development, or R&D, revenue for the three and nine months ended September 30, 2026 increased compared to the same periods in 2025 due to multiple payments we earned for programs advancing under our R&D collaborations and excluding the $280 million upfront payment we earned for the global license of sapablursen to Ono Pharmaceutical Co., Ltd. in the second quarter of 2025.

***WAINUA (Eplontersen) Collaboration with AstraZeneca***

Our financial results for the three and nine months ended September 30, 2026 and 2025 reflected the cost-sharing provisions related to our collaboration with AstraZeneca to develop and commercialize WAINUA for the treatment of ATTR. From inception through December 31, 2025, AstraZeneca was responsible for 55 percent of the costs associated with the ongoing global Phase 3 development program. Beginning on January 1, 2026, AstraZeneca was responsible for 75 percent of costs for development activities intended solely to support U.S. regulatory approvals and 87.5 percent of costs for development activities intended to support global regulatory approvals. Because we were leading and conducting the Phase 3 development program, we recognized as R&D revenue the percentage of cost-share funding AstraZeneca was responsible for, net of our share of AstraZeneca's development expenses, in the same period we incurred the related development expenses.

In June 2026, we exercised our right to opt-out of the shared responsibility and costs for development and U.S. commercialization activities under the agreement. The opt-out became effective on August 1, 2026. Effective August 1, 2026, AstraZeneca is responsible for 100 percent of WAINUA costs under this agreement.

Prior to August 2026, AstraZeneca was responsible for the majority of the medical affairs and commercial costs in the U.S. and all costs associated with bringing WAINUA to market outside the U.S. As a result, we recognized cost-share funding we received from AstraZeneca related to these activities as a reduction of our medical affairs and commercialization expenses, which we classified as R&D and selling, general and administrative, or SG&A expenses, respectively.

The following table sets forth information on revenue and expenses under this collaboration (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| WAINUA joint development revenue | $ 3.7 | $ 9.7 | $ 37.6 | $ 32.5 |
| Research and development expenses related to Phase 3 development of WAINUA | 15.5 | 19.5 | 55.1 | 65.8 |
| Medical affairs expenses for WAINUA | 1.0 | 1.7 | 5.6 | 5.7 |
| Commercialization expenses for WAINUA | 2.6 | 7.5 | 18.9 | 22.0 |

**Operating Expenses**

The following table sets forth information on operating expenses (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Operating expenses, excluding non-cash compensation expense related to equity awards | $ 330.0 | $ 285.8 | $ 974.9 | $ 817.0 |
| Non-cash compensation expense related to equity awards | 43.4 | 31.1 | 132.3 | 90.6 |
| Total operating expenses | $ 373.4 | $ 316.9 | $ 1,107.2 | $ 907.6 |

Operating expenses, excluding non-cash compensation expense related to equity awards, for the three months and nine months ended September 30, 2026 increased compared to the same periods in 2025. SG&A expenses increased as anticipated year over year primarily due to investments related to the commercialization efforts for TRYNGOLZA, DAWNZERA and ZANVASTRO. We expect our operating expenses, excluding non-cash compensation expense related to equity awards, to continue to increase during the remainder of 2026 as we advance our commercialization activities.



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Non-cash compensation expense related to equity awards for the three and nine months ended September 30, 2026 increased compared to the same periods in 2025 due to a higher stock price on the grant date of annual equity awards in 2026 compared to 2025 and increased headcount. We employed 1,485 people as of September 30, 2026 compared to 1,225 people as of September 30, 2025. We believe non-cash compensation expense related to equity awards is not indicative of our operating results or cash flows from our operations.

***Cost of Sales***

Our cost of sales is comprised of costs related to our commercial revenue, which consisted of manufacturing costs, transportation and freight, indirect overhead costs associated with the manufacturing and distribution of TRYNGOLZA, DAWNZERA, TEGSEDI and WAYLIVRA and associated period costs.

Cost of sales for newly launched products, such as TRYNGOLZA, DAWNZERA and ZANVASTRO, does not include the full cost of manufacturing until we manufacture and sell additional inventory after exhausting pre-launch inventory, which we previously recorded as R&D expense.

The following table sets forth information on cost of sales (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Cost of sales, excluding non-cash compensation expense related to equity awards | $ 3.1 | $ 2.2 | $ 8.5 | $ 7.1 |
| Non-cash compensation expense related to equity awards | 0.2 | 0.1 | 0.5 | 0.9 |
| Total cost of sales | $ 3.3 | $ 2.3 | $ 9.0 | $ 8.0 |

***Research, Development and Patent Expenses***

Our research, development and patent expenses consist of expenses for drug discovery, drug development, medical affairs, manufacturing and development chemistry and R&D support expenses.

The following table sets forth information on research, development and patent expenses (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Research, development and patent expenses, excluding non-cash compensation expense related to equity awards | $ 191.5 | $ 197.0 | $ 569.0 | $ 575.4 |
| Non-cash compensation expense related to equity awards | 24.4 | 20.8 | 74.2 | 60.6 |
| Total research, development and patent expenses | $ 215.9 | $ 217.8 | $ 643.2 | $ 636.0 |

Drug Discovery

We use our proprietary technologies to generate information about the function of genes and to determine the value of genes as drug discovery targets. We use this information to direct our own drug discovery research, and that of our partners. Drug discovery is also the function that is responsible for advancing our core technology. This function is also responsible for making investments in complementary technologies to expand the reach of our technologies.

The following table sets forth information on drug discovery expenses (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Drug discovery expenses, excluding non-cash compensation expense related to equity awards | $ 28.9 | $ 28.4 | $ 86.6 | $ 85.7 |
| Non-cash compensation expense related to equity awards | 5.4 | 4.0 | 15.4 | 11.7 |
| Total drug discovery expenses | $ 34.3 | $ 32.4 | $ 102.0 | $ 97.4 |



Drug discovery expenses, excluding non-cash compensation expense related to equity awards, were essentially flat in the three and nine months ended September 30, 2026 compared to the same periods in 2025.

Drug Development

The following table sets forth drug development expenses, including expenses for our marketed medicines and those in Phase 3 development for which we have incurred significant costs (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Eplontersen | $ 13.3 | $ 19.1 | $ 47.2 | $ 64.5 |
| Donidalorsen | 3.8 | 3.7 | 9.2 | 11.8 |
| Olezarsen | 10.6 | 25.6 | 37.7 | 68.7 |
| Zilganersen | 1.9 | 2.2 | 6.6 | 9.7 |
| Obudanersen | 10.6 | 6.8 | 30.2 | 24.3 |
| Ulefnersen | 3.4 | 2.8 | 8.9 | 8.0 |
| Other development projects | 23.7 | 23.6 | 67.7 | 59.3 |
| Development overhead expenses | 34.0 | 37.0 | 102.1 | 105.2 |
| Total drug development expenses, excluding non-cash compensation expense related to equity awards | 101.3 | 120.8 | 309.6 | 351.5 |
| Non-cash compensation expense related to equity awards | 11.0 | 9.2 | 34.3 | 26.2 |
| Total drug development expenses | $ 112.3 | $ 130.0 | $ 343.9 | $ 377.7 |

Our development expenses, excluding non-cash compensation expense related to equity awards, decreased for the three and nine months ended September 30, 2026 compared to the same periods in 2025 as several late-stage studies ended.

We may conduct multiple clinical trials on a drug candidate, including multiple clinical trials for the various indications we may be studying. Furthermore, as we obtain results from trials, we may elect to discontinue clinical trials for certain drug candidates in certain indications in order to focus our resources on more promising drug candidates or indications. Our Phase 1 and Phase 2 programs are clinical research programs that fuel our Phase 3 pipeline. When our medicines are in Phase 1 or Phase 2 clinical trials, they are in a dynamic state in which we may adjust the development strategy for each medicine. Although we may characterize a medicine as “in Phase 1” or “in Phase 2,” it does not mean that we are conducting a single, well-defined study with dedicated resources. Instead, we allocate our

internal resources on a shared basis across numerous medicines based on each medicine's particular needs at that time. This means we are constantly shifting resources among medicines. Therefore, what we spend on each medicine during a particular period is usually a function of what is required to keep the medicines progressing in clinical development, not what medicines we think are most important. For example, the number of people required to start a new study is large, the number of people required to keep a study going is modest and the number of people required to finish a study is large. However, such fluctuations are not indicative of a shift in our emphasis from one medicine to another and cannot be used to accurately predict future costs for each medicine. Because we always have numerous medicines in preclinical and varying stages of clinical research, the fluctuations in expenses from medicine to medicine, in large part, offset one another. If we partner a medicine, it may affect the size of a trial, its timing, its total cost and the timing of the related costs.

Medical Affairs

Our medical affairs function is responsible for funding and coordinating investigator-sponsored trials, communicating scientific and clinical information to healthcare providers, medical professionals and patients, and managing publications.

The following table sets forth information on medical affairs expenses (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Medical affairs expenses, excluding non-cash compensation expense related to equity awards | $ 11.5 | $ 8.9 | $ 32.8 | $ 22.3 |
| Non-cash compensation expense related to equity awards | 2.5 | 1.0 | 7.1 | 3.8 |
| Total medical affairs expenses | $ 14.0 | $ 9.9 | $ 39.9 | $ 26.1 |



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Medical affairs expenses, excluding non-cash compensation expense related to equity awards, increased in the three and nine months ended September 30, 2026 compared to the same periods in 2025 as we continued advancing our late-stage pipeline.

Manufacturing and Development Chemistry

Expenditures in our manufacturing and development chemistry function consist primarily of personnel costs, specialized chemicals for oligonucleotide manufacturing, validation batches to support regulatory approvals, laboratory supplies and outside services. Our manufacturing and development chemistry function is responsible for providing drug supplies to drug development and our collaboration partners. Our manufacturing procedures include testing to satisfy good laboratory and good manufacturing practice requirements.

The following table sets forth information on manufacturing and development chemistry expenses (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Manufacturing and development chemistry expenses, excluding non-cash compensation expense related to equity awards | $ 23.3 | $ 15.8 | $ 64.2 | $ 51.6 |
| Non-cash compensation expense related to equity awards | 2.5 | 2.1 | 8.5 | 5.8 |
| Total manufacturing and development chemistry expenses | $ 25.8 | $ 17.9 | $ 72.7 | $ 57.4 |

Manufacturing and development chemistry expenses, excluding non-cash compensation expense related to equity awards, increased in the three and nine months ended September 30, 2026 due to the timing of manufacturing performed by our contract manufacturing organizations for drug product and active pharmaceutical ingredients related to several late-stage programs.

R&D Support

In our research, development and patent expenses, we include support costs such as rent, repair and maintenance for buildings and equipment, utilities, depreciation of laboratory equipment and facilities, amortization of our intellectual property, information technology costs, procurement costs and waste disposal costs. We call these costs R&D support expenses.

The following table sets forth information on R&D support expenses (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Occupancy | $ 10.5 | $ 7.8 | $ 30.3 | $ 21.6 |
| Personnel costs | 9.4 | 7.6 | 25.8 | 21.8 |
| Patent expenses | 0.1 | 2.6 | 3.0 | 4.1 |
| Computer software and licenses | 0.4 | 3.4 | 1.3 | 9.8 |
| Insurance | 1.0 | 0.9 | 1.7 | 2.6 |
| Taxes | 1.2 | 0.7 | 3.7 | 3.9 |
| Other | 3.9 | 0.1 | 10.0 | 0.5 |
| Total R&D support expenses, excluding non-cash compensation expense related to equity awards | 26.5 | 23.1 | 75.8 | 64.3 |
| Non-cash compensation expense related to equity awards | 3.0 | 4.5 | 8.9 | 13.1 |
| Total R&D support expenses | $ 29.5 | $ 27.6 | $ 84.7 | $ 77.4 |

R&D support expenses, excluding non-cash compensation expense related to equity awards, increased in the three and nine months ended September 30, 2026 compared to the same periods in 2025 primarily due to increased occupancy costs attributed to our lease of the laboratory and office space facility that commenced in September 2025. In addition, personnel costs increased period over period due to increased headcount.



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***Selling, General and Administrative Expenses***

SG&A expenses include personnel, information technology systems and outside costs associated with the commercialization and pre-commercialization activities for our medicines and costs to support our company, our employees and our stockholders including, legal, human resources, investor relations and finance. Additionally, we include in SG&A expenses such costs as rent, repair and maintenance of buildings and equipment, depreciation and utilities costs that we need to support the corporate functions listed above. We also include fees we owe under our in-licensing agreements related to SPINRAZA and QALSODY and cost sharing payments associated with shared commercialization activities under our WAINUA collaboration with AstraZeneca.

The following table sets forth information on SG&A expenses (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Selling, general and administrative expenses, excluding non-cash compensation expense related to equity awards | $ 135.4 | $ 86.6 | $ 397.4 | $ 234.6 |
| Non-cash compensation expense related to equity awards | 18.8 | 10.2 | 57.6 | 29.1 |
| Total selling, general and administrative expenses | $ 154.2 | $ 96.8 | $ 455.0 | $ 263.7 |

SG&A expenses, excluding non-cash compensation expense related to equity awards, increased in the three and nine months ended September 30, 2026 compared to the same periods in 2025 primarily due to investments related to commercialization efforts for TRYNGOLZA, DAWNZERA and ZANVASTRO. We expect SG&A expenses to increase as we continue to invest in our independent commercial launches.

***Investment Income***

The following table sets forth information on investment income (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Investment income | $ 19.5 | $ 23.7 | $ 65.3 | $ 73.0 |

Investment income for the three and nine months ended September 30, 2026 decreased compared to the same periods in 2025 due to a decrease in our cash balance during the nine months ended September 30, 2026 compared to the same period in 2025. Our cash balance decreased due to the repayment upon maturity of our 0% Notes due 2026 in April 2026.

***Interest Expense***

The following table sets forth information on interest expense (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Convertible notes: | | | | |
| Non-cash amortization of debt issuance costs | $ 1.7 | $ 1.6 | $ 5.5 | $ 4.6 |
| Interest expense payable in cash | 2.5 | 2.5 | 7.5 | 7.6 |
| Interest on mortgage for manufacturing facility | 0.1 | 0.1 | 0.3 | 0.2 |
| Other | 0.3 | - | 1.1 | - |
| Total interest expense | $ 4.6 | $ 4.2 | $ 14.4 | $ 12.4 |



***Interest Expense Related to Sale of Future Royalties***

We recorded $4.1 million and $39.0 million of interest expense related to the sale of future royalties in the three and nine months ended September 30, 2026, respectively, compared to $18.0 million and $55.4 million in the same periods in 2025. These amounts are related to the Royalty Pharma Investments, or Royalty Pharma, transaction, in which we sold a minority interest in our future SPINRAZA and pelacarsen royalties to Royalty Pharma for a $500 million upfront payment and $625 million of potential future payments. In September 2026, we began recognizing contra-interest expense related to the Royalty Pharma arrangement due to a change in estimate. Refer to Part I, Item 1, Note 10, *Liability Related to Sale of Future Royalties*, in the Notes to Condensed Consolidated Financial Statements for further details related to the Royalty Pharma arrangement.

***Gain on Investments***

The following table sets forth information on gain on investments, net (in millions):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Gain on investments | $ 9.5 | $ 29.9 | $ 21.9 | $ 9.4 |

The period over period fluctuations in gain on investments were primarily due to changes in the fair value of investments in publicly traded biotechnology companies.

***Net Loss and Net Loss per Share***

The following table sets forth information on net loss and net loss per share (in millions, except per share amounts):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2026 | 2025 | 2026 | 2025 |
| Net loss | $ (110.0) | $ (128.6) | $ (317.1) | $ (152.0) |
| Basic and diluted net loss per share | $ (0.66) | $ (0.80) | $ (1.92) | $ (0.95) |

The period-over-period fluctuations in our net loss were driven by factors discussed in the sections above.

**Liquidity and Capital Resources**

We have financed our operations primarily from research and development collaborative agreements. We also financed our operations from commercial revenue from SPINRAZA, WAINUA and QALSODY royalties and TEGSEDI and WAYLIVRA commercial revenue. In addition, we began earning commercial revenue from TRYNGOLZA product sales in late December 2024, DAWNZERA product sales in late August 2025 and ZANVASTRO product sales in September 2026. From our inception through September 30, 2026, we have earned approximately $9.6 billion in revenue. We have also financed our operations through the sale of our equity securities, the issuance of long-term debt and the sale of future royalties. From the time we were founded through September 30, 2026, we have raised net proceeds of approximately $2.9 billion from the sale of our equity securities. Additionally, from our inception through September 30, 2026, we have borrowed approximately $3.5 billion under long-term debt arrangements and received proceeds of $0.5 billion from the sale of future royalties to finance a portion of our operations.

From December 31, 2025 to September 30, 2026, our working capital decreased primarily due to a decrease in cash, cash equivalents and short-term investments, and our long-term obligations did not change significantly. In April 2026, we paid the remaining principal balance of our 0% Notes due 2026 upon maturity. Refer to Part I, Item 1, Note 11, *Convertible Debt*, in the Notes to Condensed Consolidated Financial Statements for further details.



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The following table summarizes our contractual obligations, excluding our liability related to the sale of future royalties, as of September 30, 2026. The table provides a breakdown of when obligations become due.

| **Contractual Obligations (selected balances described below)** | **Payments Due by Period (in millions)** | | |
|---|---|---|---|
| | **Total** | **Less than 1 year** | **More than 1 year** |
| 0% Notes due 2030 (principal payable) | $ 770.0 | $ - | $ 770.0 |
| 1.75% Notes due 2028 (principal and interest payable) | 595.2 | 10.1 | 585.1 |
| Operating leases | 458.3 | 36.4 | 421.9 |
| Building mortgage payments (principal and interest payable) | 8.8 | 8.8 | - |
| Other obligations (principal and interest payable) | 0.6 | 0.1 | 0.5 |
| Total | $ 1,832.9 | $ 55.4 | $ 1,777.5 |

Our contractual obligations consist primarily of our convertible debt. In addition, we also have a facility mortgage, facility leases, equipment financing arrangements and other obligations. We believe our cash, cash equivalents and short-term investments, as well as plans for cash in the future, will be sufficient to fund our planned operations and these obligations. We have not entered into, nor do we currently have, any off-balance sheet arrangements (as defined under SEC rules).

***Convertible Debt and Call Spread***

Refer to Part I, Item 1, Note 11, *Convertible Debt*, in the Notes to Condensed Consolidated Financial Statements for the significant terms of each convertible debt instrument.

***Operating Facilities***

Refer to Part IV, Item 15, Note 7 of our audited financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2025 for further details on our operating facilities.

***Operating Leases***

Refer to Part IV, Item 15, Note 7 of our audited financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2025 for further details on our operating leases.

***Liability Related to Sale of Future Royalties***

Refer to Part I, Item 1, Note 10, *Liability Related to Sale of Future Royalties,* in the Notes to Condensed Consolidated Financial Statements for further details on our royalty purchase agreement with Royalty Pharma.

***Other Obligations***

In addition to contractual obligations, we had outstanding purchase orders as of September 30, 2026 for the purchase of services, capital equipment and materials as part of our normal course of business.

We may enter into additional collaborations with partners which could provide for additional revenue to us and we may incur additional cash expenditures related to our obligations under any of the new agreements we may enter into. We currently intend to use our cash, cash equivalents and short-term investments to finance our activities. However, we may also pursue other financing alternatives, like issuing additional shares of our common stock, issuing debt instruments, refinancing our existing debt, securing lines of credit or executing royalty monetization agreements. Whether we use our existing capital resources or choose to obtain financing will depend on various factors, including the future success of our business, the prevailing interest rate environment and the condition of financial markets generally.



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**ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

We are exposed to changes in interest rates primarily from our investments in certain short-term investments. We primarily invest our excess cash in highly liquid short-term investments of the U.S. Treasury and reputable financial institutions, corporations, and U.S. government agencies with strong credit ratings. We typically hold our investments for the duration of the term of the respective instrument. We do not utilize derivative financial instruments, derivative commodity instruments or other market risk sensitive instruments, positions or transactions to manage exposure to interest rate changes. Accordingly, we believe that, while the securities we hold are subject to changes in the financial standing of the issuer of such securities, we are not subject to any material risks arising from changes in interest rates, foreign currency exchange rates, commodity prices, equity prices or other market changes that affect market risk sensitive instruments.

We are also exposed to changes in foreign currency exchange rates as we have foreign subsidiaries with functional currencies other than the U.S. dollar. We translate our subsidiaries' functional currencies into our reporting currency, the U.S. dollar. As a result, our financial position, results of operations and cash flows can be affected by market fluctuations in the foreign currencies to U.S. dollar exchange rate, which are difficult to predict. A hypothetical 10 percent change in foreign exchange rates during any of the periods presented would not have had a material impact on our condensed consolidated financial statements.

## ITEM 4. CONTROLS AND PROCEDURES

We maintain disclosure controls and procedures that are designed to ensure that information we are required to disclose in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. We design and evaluate our disclosure controls and procedures recognizing that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance and not absolute assurance of achieving the desired control objectives.

In January 2026, we deployed a new global enterprise resource planning, or ERP, system for the company. We designed the ERP system to accurately maintain our financial records, support operational functionality and provide information to our management teams related to business operations. We have updated our internal control over financial reporting, where applicable, to accommodate related changes in our financial management processes resulting from this implementation. Except for changes in controls related to the new ERP system, there were no other changes to our internal control over financial reporting during nine months ended September 30, 2026 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

As of our most recently completed fiscal year and as of the end of the period covered by this Quarterly Report on Form 10-Q, we carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer. Based on our evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of September 30, 2026. There have been no significant changes in our internal controls or in other factors that could significantly affect internal controls subsequent to September 30, 2026, except as mentioned above.

We also performed an evaluation of any changes in our internal controls over financial reporting that occurred during our last fiscal quarter and that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting. We conducted this evaluation under the supervision of and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer. That evaluation did not identify any changes in our internal controls over financial reporting that occurred during our latest fiscal quarter and that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.



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# PART II — OTHER INFORMATION

## ITEM 1. LEGAL PROCEEDINGS

For details of legal proceedings, refer to Part I, Item 1, Note 12, *Legal Proceedings*, in the Notes to Condensed Consolidated Financial Statements.

## ITEM 1A. RISK FACTORS

*Investing in our securities involves a high degree of risk. You should carefully consider the following information about the risks described below, together with the other information contained in this report and in our other public filings in evaluating our business. If any of the following risks actually occur, our business could be materially harmed, and our financial condition and results of operations could be materially and adversely affected. As a result, the trading price of our securities could decline, and you might lose all or part of your investment. We have marked with an asterisk those risk factors that reflect substantive changes from the risk factors included in our Annual Report on Form 10-K for the year ended December 31, 2025.*

### Summary of Risk Factors

There are a number of risks related to our business and our securities. Some of the principal risks related to our business include the following:

- Our ability to generate substantial revenue from the sale of our medicines;
- The availability of adequate coverage and payment rates for our medicines;
- Our and our partners' ability to compete effectively;
- Our ability to successfully manufacture our medicines;
- Our ability to successfully develop and obtain marketing approvals for our medicines;
- Our ability to secure and maintain effective corporate partnerships;
- Our ability to sustain cash flows and achieve consistent profitability;
- Our ability to protect our intellectual property;
- Our ability to maintain the effectiveness of our personnel;
- The impacts of health epidemics, climate change, war and other events;
- Our dependence upon our own and third-party data, information technology systems and infrastructure; and
- The other factors set forth below.

### Risks Related to the Commercialization of our Medicines

**We have limited experience as a company in commercializing medicines and we will have to continue to invest significant resources to develop our capabilities. If we are unable to establish or maintain an effective commercialization infrastructure, or enter into agreements with third parties to commercialize our medicines, we may not be able to successfully commercialize our medicines.***

We have historically relied on third parties to commercialize our marketed medicines and have limited experience as a company in commercializing medicines. We currently have three independently launched medicines, TRYNGOLZA, DAWNZERA, and ZANVASTRO, and we expect to independently launch additional medicines in the future. Any failure to effectively commercialize our medicines, including our failure to allocate resources to our commercial launches efficiently or timely, could adversely impact the revenue we generate from our medicines. If the commercialization of our independently launched medicines and future sales of such are less successful than anticipated by us or our investors or securities analysts, our stock price could decline and our business may be harmed.



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We will have to continue to invest significant financial and management resources to build and maintain the infrastructure required to successfully commercialize our medicines. We will need to establish and maintain effective sales teams for each of our independently launched medicines and there are significant risks involved in managing a sales organization, including our ability to hire, retain and incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel, and effectively manage a geographically dispersed sales and marketing team. We must also continue to scale-up existing internal support functions to aid our commercialization efforts, which will need to work effectively in coordination with commercial functional areas. Any failure to establish or maintain an effective commercialization infrastructure, including our sales, marketing, market access, distribution, and related capabilities, scale-up our existing support functions, or effectively integrate new functional areas, could adversely affect our ability to successfully commercialize our medicines.

If we choose to rely on third parties to assist us in commercializing our medicines, we may not be able to enter into collaborations or hire consultants or external service providers on acceptable financial terms, or at all. In addition, if we continue to engage third parties to assist us in the commercialization of our medicines, our product revenues and profitability may be lower than if we commercialized such medicines ourselves.

The proximity of our current and planned independent launches could increase the likelihood that the risks set forth above will occur.

**If the market does not adopt our medicines, including our commercial medicines and our medicines in development, we are not likely to generate substantial revenues or become consistently profitable.**

Even if our medicines are authorized for marketing, our success will depend upon the medical community, patients and third-party payers considering our medicines medically useful, cost-effective, safe and convenient. Even when the FDA or foreign regulatory authorities authorize our or our partners' medicines for commercialization, doctors may not prescribe our medicines to treat patients. Furthermore, we and our partners may not successfully commercialize additional medicines.

Additionally, in many of the markets where we or our partners may sell our medicines in the future, if we or our partners cannot agree with the government or other third-party payers regarding the price we can charge for our medicines, we or our partners may not be able to sell our medicines in that market. Similarly, cost control initiatives by governments or third-party payers could decrease the price received for our medicines or increase patient coinsurance to a level that makes our medicines, including our commercial medicines and our medicines in development, economically unviable. If the pricing of any of our medicines decreases for any reason, it will reduce our revenue for such medicine. For example, Biogen has in the past disclosed that SPINRAZA revenue decreased in part due to lower pricing in the U.S. and certain rest-of-world markets.

The degree of market adoption of our medicines, including our commercial medicines and our medicines in development, depends upon several factors, including the:

- receipt and scope of marketing authorizations;
- establishment and demonstration in the medical and patient community of the efficacy and safety of our medicines, public perception regarding our medicines and their potential advantages over competing products;
- cost and effectiveness of our medicines compared to other available therapies;
- patient convenience of the dosing regimen for our medicines; and
- reimbursement policies of government and third-party payers.

With respect to TRYNGOLA, it is the first and only treatment approved to reduce triglycerides and the risk of acute pancreatitis in people living with sHTG. As such, we are building a new market that requires health care practitioners to adopt a new approach to patient care, which takes time. Prescribers want to see how a patient responds to treatment with TRYNGOLZA before prescribing more broadly. This dynamic has and may continue to result in a more gradual launch ramp than we originally expected.

Based on the profile of our medicines, physicians, patients, patient advocates, payers or the medical community in general may not adopt any of the medicines that we or our partners may develop. For example, the product label for WAYLIVRA in the EU requires regular blood monitoring, which has negatively affected our ability to attract and retain patients for this medicine.



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**If government or other third-party payers fail to provide adequate coverage and payment rates for our medicines, including our commercial medicines and our medicines in development, or if healthcare reform measures increase our costs, decrease our sales, or negatively impact reimbursement for our products, our revenue will be limited.***

In both domestic and foreign markets, sales of our current and future products will depend in part upon the availability of coverage and reimbursement from third-party payers. The majority of patients in the U.S. who would fit within our target patient populations for our medicines have their healthcare supported by a combination of Medicare coverage, other government health programs such as Medicaid, managed care providers, private health insurers and other organizations. Coverage decisions may depend upon clinical and economic standards that disfavor new medicines when more established or lower cost therapeutic alternatives are already available or subsequently become available. Assuming coverage is approved, the resulting reimbursement payment rates might not be enough to make our medicines affordable. Even if favorable coverage status and adequate reimbursement rates are attained, less favorable coverage policies and reimbursement rates may be implemented in the future. Accordingly, our commercial medicines and our medicines in development will face competition from other therapies and medicines for limited financial resources. Furthermore, we or our partners may need to conduct post-marketing studies to demonstrate the cost-effectiveness of any future products to satisfy third-party payers. These studies might require us to commit a significant amount of management time and financial and other resources. In addition, third-party payers may never consider our future products as cost-effective and adequate third-party coverage and reimbursement might not be available to enable us to maintain price levels sufficient to realize an appropriate return on investment in product development.

Third-party payers, whether foreign or domestic, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In addition, in the U.S., no uniform policy of coverage and reimbursement for medicines exists among third-party payers. Therefore, coverage and reimbursement for medicines can differ significantly from payer to payer.

For example, the TRYNGOLZA launch for sHTG is at an early stage where a majority of TRYNGOLZA prescriptions require a medical exemption. Some health care practitioners are hesitant to prescribe a newly approved medicine, like TRYNGOLZA, before formal coverage with payors is in place. We are working with payors to establish coverage for TRYNGOLZA but our success may be limited. In addition, regarding DAWNZERA, we are experiencing increased price pressure from payors in the competitive HAE market.

Further, we believe that future coverage, reimbursement and pricing will likely be subject to increased restrictions both in the U.S. and in international markets. In the U.S., recent health reform measures have resulted in reductions in Medicare and other healthcare funding, and there have been several recent U.S. Congressional inquiries, legislation and executive orders designed to, among other things, reduce drug prices, increase competition (including by enhancing support for generic and biosimilar drugs), lower out-of-pocket drug costs for patients, curtail spread pricing practices by pharmacy benefit managers, and foster scientific innovation to promote better health care and improved health. For example, the Affordable Care Act substantially changed the way healthcare is financed by both governmental and private insurers and continues to significantly impact the U.S. pharmaceutical industry. Since its enactment, there have been amendments and judicial, Congressional and executive branch challenges to certain aspects of the Affordable Care Act, as well as efforts to repeal or replace certain aspects of the

Affordable Care Act. We expect that additional U.S. federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that the U.S. federal government will pay for healthcare products and services, which could result in reduced demand or revenue for our commercial medicines and our medicines in development.

In addition, the Inflation Reduction Act of 2022, or the IRA, includes key actions aimed at reducing the costs of prescription drugs and allows the U.S. Department of Health and Human Services, or HHS, to negotiate the price of certain single-source drugs covered under Medicare and establish a price cap on such drugs. The IRA, among other things, (1) directed HHS to negotiate the price of certain single-source drugs and biologics that have been on the market for at least seven years covered under Medicare, or the Medicare Drug Price Negotiation Program, and (2) imposed rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. Each year, up to 20 products will be selected by HHS for the Medicare Drug Price Negotiation Program. Products subject to the Medicare Drug Price Negotiation Program are expected to experience a significant reduction in reimbursement from the Medicare program on a per unit basis.





The current U.S. Presidential administration is pursuing policies to reduce regulations and expenditures across government agencies, including at the FDA, HHS, Centers for Medicare & Medicaid Services, or CMS, and other related agencies, with a particular focus on most favored nation pricing equal to or lower than those paid in other developed nations. These actions, presently directed by executive orders or memoranda from the Office of Management and Budget, may propose additional policy changes that create uncertainty for our business. For example, in furtherance of the administration's drug pricing initiatives, CMS has finalized or proposed several new mandatory and voluntary payment models to implement a most favored nation rebate model. These models are referred to as the GENEROUS Model, the GLOBE Model, and the GUARD Model. CMS is currently operationalizing the voluntary GENEROUS Model, and the GLOBE Model was finalized on September 30, 2026. We do not expect the implementation of the GLOBE Model to have a significant impact on our business. The GUARD Model has not yet been finalized, and it remains unclear whether any substantive changes will be made to such model prior to its implementation. These and other recent actions and policies may significantly reduce U.S. drug prices, potentially impacting manufacturers' global pricing strategies and profitability, while increasing their operational costs and compliance risks.

Any reduction in reimbursement from Medicare and other government programs may result in a similar reduction in payments from private payers. Our future product sales may be subject to additional discounts from list price in the form of rebates and discounts provided to covered entities under the Public Health Service Act 340B drug pricing program. Changes to the 340B program or to Medicare or Medicaid programs at the federal or state level, including outcomes of ongoing litigation in our industry, may impact our product prices and rebate liability.

At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. Third-party coverage and reimbursement for medicines may not be available or adequate in either the U.S. or international markets, which would negatively affect the potential commercial success of our products, our revenue and our profits.

**If we or our partners fail to compete effectively, our medicines, including our commercial medicines and our medicines in development, will not generate significant revenues.***

The biotechnology and pharmaceutical industries are highly competitive and subject to significant and rapid technological change. Our competitors engage in drug discovery throughout the world, are numerous, and include, among others, major pharmaceutical companies and specialized biopharmaceutical firms. In addition, other companies are engaged in developing RNA-targeted technology. Our competitors may, among other things, relative to our medicines or medicines in development:

- develop safer or more effective products;
- develop less costly products;
- receive more favorable reimbursement coverage;
- implement more effective approaches to sales and marketing;
- develop products that are more convenient to use than our medicines;
- have access to increased manufacturing capacity;
- obtain regulatory approval for products more quickly; or
- establish superior intellectual property positions.

These competitive advantages could make our medicines, including our commercial medicines and our medicines in development, obsolete or non-competitive.

Many of our competitors have substantially greater financial, technical and human resources than we do. In addition, many of these competitors have significantly greater experience than we do in conducting preclinical testing and human clinical studies of new pharmaceutical products, in obtaining FDA and other regulatory authorizations of such products and in commercializing such products.





There are several pharmaceutical and biotechnology companies engaged in the development or commercialization in certain geographic markets of products against targets that are also targets of products in our development pipeline or of medicines we are commercializing. For example:

- TRYNGOLZA faces competition in FCS from a commercial competitor and, in sHTG, could face competition from commercial competitors in the future;
- DAWNZERA faces competition from several commercial competitors, including an oral product, and could face competition from additional commercial competitors in the future;
- WAINUA faces competition from numerous competitors, including an oral product in markets outside the U.S.;
- HIBSAGO faces competition from several commercial competitors, including oral products, and could face competition from additional commercial competitors in the future;
- SPINRAZA faces competition from both a gene therapy product and an oral product for the treatment of SMA. Biogen has in the past disclosed that SPINRAZA revenue decreased due to a reduction in demand as a result of increased competition and that future sales of SPINRAZA may be adversely affected by competing products;
- QALSODY could face competition from a commercial competitor in the future; and
- Obudanersen, if approved, could face competition from commercial competitors in the future, including oral products.

For details regarding medicines that compete or may compete directly with our marketed medicines and late-stage medicines, refer to the section titled, *Competition*, in Part I, Item 1, *Business*, in our Annual Report on Form 10-K for the year ended December 31, 2025.

Certain of our partners are pursuing other technologies or developing other medicines either on their own or in collaboration with others, including our competitors, to treat some of the same diseases that our own programs target. Competition may negatively impact a partner's focus on and commitment to our

medicines and, as a result, could delay or otherwise negatively affect the commercialization of our partnered medicines. Additionally, companies that are developing medicines that target the same patient populations as our medicines in development may compete with us to enroll participants in the clinical trials for such medicines, which could make it more difficult for us to complete enrollment for these clinical trials.

**Our medicines could be subject to regulatory limitations following approval.**

Following approval of a medicine, we and our partners must comply with comprehensive government regulations regarding the manufacture, marketing and distribution of medicines. The FDA and foreign regulatory bodies have the authority to impose significant restrictions on an approved medicine through the product label. We or our partners may not obtain the labeling claims necessary or desirable to successfully commercialize our medicines, including our commercial medicines and our medicines in development.

Promotional communications regarding prescription medicines must be consistent with the information in the product's approved labeling. Additionally, prescription medicines may be promoted only for the approved indication(s) in accordance with the approved label. The FDA and other regulatory authorities actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

In addition, when approved, the FDA or a foreign regulatory authority may condition approval on the performance of post-approval clinical studies or patient monitoring, which could be time-consuming and expensive. For example, in connection with the conditional marketing approval for WAYLIVRA in the EU, we are required to conduct a post-authorization safety study to evaluate the safety of WAYLIVRA on thrombocytopenia and bleeding in FCS patients taking WAYLIVRA. If the results of such post-marketing studies are not satisfactory, the FDA, EC or foreign regulatory authorities may withdraw the marketing authorization or may condition continued marketing on commitments from us or our partners that may be expensive and time-consuming to fulfill.

If we or others identify side effects after any of our medicines are on the market, or if manufacturing problems occur subsequent to regulatory approval, or if we, our contract manufacturing organizations, or our partners fail to comply with regulatory requirements, we or our partners may, among other things, lose regulatory approval and be forced to withdraw products from the market, need to conduct additional clinical studies, incur restrictions on the marketing, distribution or manufacturing of the product, and/or change the labeling of our medicines.



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**We depend on our collaborations for the development and commercialization of certain of our medicines, including our collaborations with Biogen and GSK.***

We have entered into significant collaborative arrangements with biopharmaceutical companies, including separate collaborations with Biogen to develop and commercialize SPINRAZA and QALSODY, and a collaboration with GSK to develop and commercialize HIBSAGO. We entered into these collaborations primarily to:

- fund our development activities;
- seek and obtain regulatory approvals;
- manufacture; and
- successfully commercialize such medicines globally.

We are relying on these collaborators to obtain additional regulatory approvals for these medicines, generate additional clinical data for these medicines, manufacture these medicines, and successfully commercialize these medicines. In general, we cannot control the amount and timing of resources that our collaborators devote to our collaborations. If either of these collaborators fails to further develop, obtain regulatory approvals or additional regulatory approvals for, manufacture, or successfully commercialize medicine under the collaboration, revenues for such medicine would be negatively affected.

In addition, our collaborations may not continue for various reasons. Biogen and GSK can terminate the respective collaborations at any time. If either collaborator stops developing or commercializing a medicine under the applicable collaboration, we would have to seek or spend additional funding, and the commercialization for such medicine may be harmed.

**We depend on our collaboration with AstraZeneca for the development and commercialization of WAINUA.***

In December 2021, we entered into a collaborative agreement with AstraZeneca under which we granted AstraZeneca exclusive worldwide rights to develop and commercialize WAINUA, with the parties sharing responsibility and costs for development and U.S. commercialization activities, and AstraZeneca assuming sole responsibility for commercialization outside the U.S. We exercised our opt-out right under the agreement and the opt-out process set forth in the agreement is underway. In general, we cannot control the amount and timing of resources that AstraZeneca devotes to our collaboration. In addition, we do not have control over whether AstraZeneca elects to terminate the collaborative arrangement. If AstraZeneca fails to further develop or successfully commercialize WAINUA for any reason, our revenues for WAINUA would be negatively affected.

**If we are not successful in expanding our manufacturing capabilities or cannot manufacture our medicines or contract with a third party to manufacture our medicines at costs that allow us to charge competitive prices to buyers, we cannot market our products profitably.***

To successfully commercialize any of our medicines, we need to optimize and manage large-scale commercial manufacturing capabilities either on a standalone basis or through a third-party manufacturer. As our drug development and commercial pipeline increases and matures, we will have a greater need for clinical trial and commercial manufacturing capacity. We also must ensure that we have the manufacturing capabilities in place to support advances in our drug development activities, such as new chemistries. While we believe our current capabilities and those we obtain through third-party manufacturers support our manufacturing needs now, it will be important to expand our manufacturing infrastructure in the future, which will likely require substantial expenditures. If we are not successful in executing this expansion, or if the demand for any of our commercial medicines exceeds our expectations, it could limit our ability to meet our manufacturing requirements and commercial objectives in the future.

In addition, we have limited experience manufacturing pharmaceutical products of the chemical class represented by our medicines, called oligonucleotides, on a commercial scale for the systemic administration of a medicine. There are a small number of suppliers for certain capital equipment and raw materials that we use to manufacture our medicines, and some of these suppliers will need to increase their scale of production to meet our projected needs for commercial manufacturing. If a supplier chooses to devote more resources to other products, especially products with higher manufacturing capacity needs, that could impact such supplier's capability to deliver our requirements timely. Further, we must continue to improve our manufacturing processes to allow us to reduce our drug costs. We or our partners may not be able to manufacture our medicines at a cost or in quantities necessary to make commercially successful products.



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Manufacturers, including us, must adhere to the FDA's cGMP regulations and similar regulations in foreign countries, which the applicable regulatory authorities enforce through facilities inspection programs. We, our partners and our contract manufacturers may not comply or maintain compliance with cGMP, or

similar foreign regulations. Non-compliance could significantly delay or prevent receipt of marketing authorizations for our medicines, including authorizations for our commercial medicines and our medicines in development, or could result in enforcement action after authorization that might limit the commercial success of our medicines.

We rely on third-party manufacturers to supply the drug substance and drug product for TRYNGOLZA, DAWNZERA and WAINUA and drug product for WAYLIVRA and ZANVASTRO. The operations of our suppliers, many of which are located outside of the United States, are subject to additional risks that are beyond our control. For example, tariffs on the raw materials, components, or equipment used to manufacture our products, or on our drug substance or finished products, will increase our manufacturing costs. On April 2, 2026, President Trump issued a proclamation that imposes tariffs of up to 100% on imported patented pharmaceutical products and active pharmaceutical ingredients, with specified exceptions. We believe the impacts of such tariffs on our business will be limited and manageable. In addition, merger and acquisition activity within the commercial manufacturing space could reduce the availability of resources from our third-party manufacturers. Delays or disruption to our own or third-party commercial manufacturing capabilities for any reason could limit the commercial success of our medicines.

## Risks Related to the Development and Regulatory Approval of our Medicines

**If we or our partners fail to obtain regulatory approval for our medicines and additional approvals for our commercial medicines, we or our partners cannot sell them in the applicable markets.**

We cannot guarantee that any of our medicines will be considered safe and effective or will be approved for commercialization. In addition, it is possible that our commercial medicines may not be approved in additional markets or for additional indications. We and our partners must conduct time-consuming, extensive and costly clinical studies to demonstrate the safety and efficacy of each of our medicines before they can be approved or receive additional approvals for sale. We and our partners must conduct these studies in compliance with FDA regulations and with comparable regulations in other countries.

We and our partners may not obtain necessary regulatory approvals on a timely basis, if at all, for our medicines. It is possible that regulatory authorities will not approve our medicines for marketing or our commercial medicines in additional markets or for additional indications. If the FDA or another regulatory authority believes that we or our partners have not sufficiently demonstrated the safety or efficacy of any of our medicines, including our commercial medicines or our medicines in development, the authority will not approve such medicine or will require additional studies, which could be time-consuming and expensive and delay or harm commercialization of the medicine. For example, in August 2018 we received a complete response letter from the FDA regarding the new drug application for WAYLIVRA in which the FDA determined that the safety concerns identified with WAYLIVRA in our clinical development program outweighed the expected benefits of triglyceride lowering in patients with FCS. We also received a Notice of Non-Compliance Withdrawal Letter, or Non-W, from Health Canada for WAYLIVRA in November 2018.

The FDA or other comparable foreign regulatory authorities can delay, limit or deny approval of a medicine for many reasons, including:

- such authorities may disagree with the design or implementation of our clinical studies;
- we or our partners may be unable to satisfactorily demonstrate that a medicine is safe and effective for any indication;
- such authorities may not accept clinical data from studies conducted at clinical facilities that have deficient clinical practices or that are in countries where the standard of care is potentially different from that in the U.S.;
- we or our partners may be unable to demonstrate that our medicine's clinical and other benefits outweigh its safety risks to support approval;
- such authorities may disagree with the interpretation of data from preclinical or clinical studies;
- such authorities may find deficiencies in the manufacturing processes or facilities of third-party manufacturers who manufacture clinical and commercial supplies for our medicines; and
- the approval policies or regulations of such authorities or their prior guidance to us or our partners during clinical development may significantly change in a manner rendering our clinical data insufficient for approval.

Failure to receive marketing authorization for our medicines in development, or failure to receive additional marketing authorizations for our commercial medicines, or delays in these authorizations, could prevent or delay commercial introduction of the medicine, and, as a result, could negatively impact our ability to generate revenue from product sales.



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**If the results of clinical testing indicate that any of our medicines are not suitable for commercial use, we may need to abandon one or more of our drug development programs.**

Drug discovery and drug development have inherent risks and the historical failure rate for drugs is high. Antisense medicines are a relatively new approach to therapeutics. If we cannot demonstrate that our medicines are safe and effective for human use in the intended indication(s), we may need to abandon one or more of our drug development programs.

**Even if our medicines are successful in preclinical and human clinical studies, the medicines may not be successful in late-stage clinical studies. Similarly, topline, preliminary or interim data we release for any of our clinical studies may not be indicative of full or final results from such study.***

Successful results in preclinical or initial human clinical studies, including the Phase 2 results for some of our medicines in development, may not predict the results of subsequent clinical studies. If any of our medicines in Phase 3 clinical studies do not show sufficient safety and efficacy in patients with the targeted indication, or if such studies are discontinued for any other reason, it could negatively impact our development and commercialization goals for these medicines and our stock price could decline. In addition, we may release topline, preliminary or interim data for any of our clinical studies. The interim, topline or preliminary results we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. As a result, such data should be viewed with caution until the final data are available.

In the past, we have invested in clinical studies of medicines that have not met the primary clinical endpoints in their Phase 3 studies or have been discontinued for other reasons. For example, in September 2026, we and Novartis announced that the pelacarsen Phase 3 Lp(a) HORIZON study did not meet its primary endpoint of reducing the risk of cardiovascular events, a composite of cardiovascular death, non-fatal myocardial infarction, non-fatal stroke, and urgent coronary revascularization requiring hospitalization, compared to placebo. In addition, in July 2026, we and AstraZeneca announced that the CARDIO-TTRansform Phase 3 trial for eplontersen in patients with ATTR-CM did not meet the primary efficacy endpoint of the composite outcome of cardiovascular, or CV, mortality and recurrent CV clinical events up to Week 140 compared with placebo.

There are a number of factors that could cause a clinical study to fail or be delayed, including:

- the clinical study may produce negative or inconclusive results;
- regulators may require that we hold, suspend or terminate clinical research for noncompliance with regulatory requirements;
- we, our partners, the FDA or foreign regulatory authorities could suspend or terminate a clinical study due to adverse side effects of a medicine on subjects or lack of efficacy in the trial;

- we or our partners may decide, or regulators may require us, to conduct additional preclinical testing or clinical studies;
- enrollment in our clinical studies may be slower than we anticipate;
- we or our partners, including our independent clinical investigators, contract research organizations and other third-party service providers on which we rely, may not identify, recruit or train suitable clinical investigators at a sufficient number of study sites or timely enroll a sufficient number of study subjects in the clinical study;
- the institutional review board for a prospective site might withhold or delay its approval for the study;
- people who enroll in the clinical study may later drop out due to adverse events, a perception they are not benefiting from participating in the study, fatigue with the clinical study process or personal issues;
- a clinical study site may deviate from the protocol for the study;
- the cost of our clinical studies may be greater than we anticipate;
- our partners may decide not to exercise any existing options to license and conduct additional clinical studies for our medicines; and
- the supply or quality of our medicines or other materials necessary to conduct our clinical studies may be insufficient, inadequate or delayed.

Further, the FDA or other regulatory authorities could request, among other things, additional information or commitments before we can start or continue a clinical study, protocol amendments, increased safety monitoring, additional product labeling information, and post-approval commitments. This happened in connection with the conditional marketing approval for WAYLIVRA in the EU, as the European Commission is requiring us to conduct a post-authorization safety study to evaluate the safety of WAYLIVRA on thrombocytopenia and bleeding in FCS patients taking WAYLIVRA. In addition, under accelerated approval, the FDA is requiring completion of the ongoing Phase 3 trial for QALSODY to confirm the clinical benefit of QALSODY.



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Moreover, our commercial medicines are chemically similar to each other. As a result, a safety observation we encounter with one of our medicines could have, or be perceived by a regulatory authority to have, an impact on a different medicine we are developing. This could cause the FDA or other regulators to ask questions or take actions that could harm or delay our ability to develop and commercialize our medicines or increase our costs. Any failure or delay in our clinical studies could reduce the commercial potential or viability of our medicines.

**We depend on third parties to conduct clinical studies for our medicines and any failure of those parties to fulfill their obligations could adversely affect our development and commercialization plans.***

We depend on independent clinical investigators, contract research organizations and other third-party service providers to conduct our clinical studies for our medicines and expect to continue to do so in the future. For example, we use clinical research organizations, such as Icon Clinical Research Limited, Medpace, Inc., Parexel International Corporation, Syneos Health, Inc. and Thermo Fisher Scientific Inc. for the clinical studies for our medicines, including obudanersen and ulefnersen. We rely heavily on these parties for successful execution of our clinical studies, but do not control many aspects of their activities. For example, the investigators are not our employees, but we are responsible for ensuring that such investigators conduct each of our clinical studies in accordance with the general investigational plan and approved protocols for the study. Third parties may not complete activities on schedule or may not conduct our clinical studies in accordance with regulatory requirements or our stated protocols. For example, some of our key vendors have in the past experienced labor shortages, which impacted their ability to perform services for us for certain of our clinical trials. Subsequent failures of these third parties to carry out their obligations, or a termination of our relationship with such third parties, could delay or prevent the development, marketing authorization and commercialization of our medicines.

In addition, while we do not have any clinical trial sites in Russia, Ukraine, Gaza or Iran, we do have a limited number of clinical trial sites in Israel, Turkey and Cyprus that may be materially impacted by the war between Russia and Ukraine and the armed conflict between the United States/Israel and Iran and surrounding areas, or collectively, conflicts in Eastern Europe and the Middle East, and could result in difficulties enrolling or completing our clinical trials in such areas on schedule.

**Since corporate partnering is part of our strategy to fund the advancement and commercialization of some of our development programs, if any of our collaborative partners fail to fund our collaborative programs, or if we cannot obtain additional partners, we may have to delay or stop progress on those drug development programs.***

To date, corporate partnering has played a significant role in our strategy to fund our development programs and to add key development resources. While we are now commercializing some of our medicines independently, we still plan to continue to rely on additional collaborative arrangements to develop and commercialize some of our unpartnered medicines. However, we may not be able to negotiate favorable collaborative arrangements for these drug programs. If we cannot continue to secure additional collaborative partners, our revenues could decrease and the development of our medicines could suffer.

Our corporate partners are developing and funding many of the medicines in our development pipeline. For example, we are relying on:

- AstraZeneca for the development and funding of eplontersen;
- GSK for development and funding of HIBSAGO;
- Ono for development and funding of sapablursen;
- Roche for development and funding of sefaxersen; and
- Otsuka for development and funding of ulefnersen.

If any of these pharmaceutical companies stops developing and funding these medicines, our business could suffer and we may not have, or be willing to dedicate, the resources available to develop these medicines on our own. Our collaborators can terminate their relationships with us under certain circumstances, many of which are outside of our control. For example, in 2025, Novartis decided to return the clinical development program for a follow on to pelacarsen, and in 2022, Pfizer and Bayer decided to discontinue the clinical development programs for vupanorsen and fesomersen, respectively.

**Even with funding from corporate partners, if our partners do not effectively perform their obligations under our agreements with them, it would delay or stop the progress of our drug development and commercial programs.**

In addition to receiving funding, we enter into collaborative arrangements with third parties to:

- conduct clinical studies;
- seek and obtain marketing authorizations; and
- manufacture and commercialize our medicines.



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Once we have secured a collaborative arrangement to further develop and commercialize one of our drug development programs, such as our collaborations with AstraZeneca, Biogen, GSK, Ono, Otsuka and Roche, these collaborations may not continue or result in commercialized medicines, or may not progress as quickly as we anticipated.

For example, a collaborator such as AstraZeneca, Biogen, GSK, Ono, Otsuka or Roche, could determine that it is in its financial interest to:

- pursue alternative technologies or develop alternative products that may be competitive with the medicine that is part of the collaboration with us;
- pursue higher-priority programs or change the focus of its own development programs; or
- devote fewer resources to our medicines than it does to its own medicines.

If any of these occur, it could affect our partner's commitment to the collaboration with us and could delay or otherwise negatively affect the commercialization of our medicines, including DAWNZERA, HIBSAGO, QALSODY, SPINRAZA, WAINUA, sapablursen, sefaxersen, and ulefnersen.

**We may not be able to benefit from designations for our medicines from regulatory authorities that are intended to confer benefits such as financial incentives or an accelerated regulatory pathway.***

In the U.S., under the Orphan Drug Act, the FDA may designate a medicine as an Orphan Drug if it is intended to treat a rare disease or condition affecting fewer than 200,000 individuals in the U.S. Orphan Drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process, but it can provide financial incentives, such as tax advantages and user-fee waivers, as well as longer regulatory exclusivity periods. The FDA has granted Orphan Drug designation to WAINUA for the treatment of patients with ATTR, to obudanersen for the treatment of patients with Angelman syndrome, to salanersen for the treatment of patients with SMA, to ulefnersen for the treatment of patients with FUS-ALS, and to some of our earlier stage medicines. The FDA and EMA have granted Orphan Drug designation to DAWNZERA for the treatment of patients with HAE, to QALSODY for the treatment of patients with SOD1-ALS, to TRYNGOLZA for the treatment of patients with FCS, to WAYLIVRA for the treatment of patients with FCS, to ZANVASTRO for the treatment of patients with AxD, to sapablursen for the treatment of patients with PV, and to some of our earlier stage medicines. In addition, the EMA has granted Orphan Drug designation to WAYLIVRA for the treatment of patients with FPL. Even if approval is obtained for a medicine that has been designated as an Orphan Drug, we may lose Orphan Drug exclusivity if the FDA or EMA determines that the request for designation was materially defective or if we cannot assure sufficient quantity of the applicable medicine to meet the needs of patients with the rare disease or condition, or if a competitor is able to gain approval for the same or a substantially similar medicine in a safer or more effective form or that makes a major contribution to patient care. If we lose Orphan Drug exclusivity on any of our medicines, we may face increased competition and lose market share for such medicine.

We may also seek rare pediatric disease designation for some of our medicines. The FDA defines "rare pediatric disease" as a serious or life-threatening disease in which the serious or life-threatening manifestations primarily affect individuals aged from birth to 18 years or is a rare disease or condition within the meaning of the Orphan Drug Act. Designation of a medicine as a medicine for a rare pediatric disease does not guarantee that a marketing application for such medicine will meet the eligibility criteria for a rare pediatric disease priority review voucher, or PRV, at the time the application is approved. Under the Federal Food, Drug and Cosmetic Act, we will need to request a rare pediatric disease PRV in our original marketing application for any potential medicine for which we have received rare pediatric disease designation. The FDA may determine that a marketing application for any such medicine, if approved, does not meet the eligibility criteria for a PRV. Under the current statutory sunset provisions, the PRV program will sunset after September 30, 2029, and the FDA may not award PRVs under this program after such date.



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## Risks Associated with our Businesses as a Whole

### *Risks related to our financial condition*

**If we fail to obtain timely funding, we may need to curtail or abandon some of our programs.**

Many of our medicines are undergoing clinical studies or are in the early stages of research and development. Most of our programs will require significant additional research, development, manufacturing, preclinical and clinical testing, marketing authorizations, preclinical activities and commitment of significant additional resources prior to their successful commercialization. In addition, as we commercialize more medicines on our own, we will need to invest significant financial resources to continue developing the infrastructure required to successfully commercialize our medicines, including building and maintaining new support functions, scaling up existing internal support functions and expanding our manufacturing capabilities. All of these activities will require significant cash. As of September 30, 2026, we had cash, cash equivalents and short-term investments equal to $1.9 billion. If we or our partners do not meet our goals to successfully commercialize our medicines, including our commercial medicines, or to license certain medicines and proprietary technologies, we will need additional funding in the future. Our future capital requirements will depend on many factors such as:

- successful commercialization of our commercial medicines;
- the profile and launch timing of our medicines in development;
- changes in existing collaborative relationships and our ability to establish and maintain additional collaborative arrangements;
- continued scientific progress in our research, drug discovery and development programs;
- the size of our programs and progress with preclinical and clinical studies;
- the time and costs involved in obtaining marketing authorizations;
- competing technological and market developments, including the introduction by others of new therapies that address our markets; and
- our manufacturing requirements and capacity to fulfill such requirements.

If we need additional funds, we may need to raise them through public or private financing. Additional financing may not be available on acceptable terms or at all. If we raise additional funds by issuing equity securities, the shares of existing stockholders will be diluted and the price, as well as the price of our other securities, may decline. For example, in September 2024, we completed an underwritten public offering of 11,500,000 shares of our common stock for total net proceeds, after deducting underwriting discounts and commissions and other offering expenses payable by us, of approximately $489.1 million. If adequate funds are not available or not available on acceptable terms, we may have to cut back on one or more of our research, drug discovery or development programs, or commercial operations. Alternatively, we may obtain funds through arrangements with collaborative partners or others, which could require us to give up rights to certain of our technologies or medicines.

**We have incurred losses, and our business will suffer if we fail to consistently achieve profitability in the future.**

Because drug discovery and development require substantial lead-time and money prior to commercialization, our expenses have generally exceeded our revenue since we were founded in January 1989. As of September 30, 2026, we had an accumulated deficit of approximately $2.9 billion and stockholders' equity of approximately $0.4 billion. Most of our income has historically come from collaborative arrangements, including commercial revenue from royalties and R&D revenue, with additional income from research grants and the sale or licensing of our patents, as well as interest income. We will need to continue investing significant financial resources to commercialize medicines on our own, and we expect our future revenue to be driven primarily by commercial sales. If we do not earn substantial revenue from commercial sales, we may incur additional operating losses in the future, which could restrict our ability to successfully develop additional medicines or sustain future profitability.

*Risks related to our intellectual property*

**If we cannot protect our patent rights or our other proprietary rights, others may compete more effectively against us.***

Our success depends to a significant degree upon whether we can continue to develop, secure and maintain intellectual property rights to proprietary products and services. However, we may not receive issued patents on any of our pending patent applications in the U.S. or in other countries and we may not be able to obtain, maintain or enforce our patents and other intellectual property rights, any of which could impact our ability to compete effectively. In addition, the scope of any of our issued patents may not be sufficiently broad to provide us with a competitive advantage. Furthermore, other parties may successfully challenge, invalidate or circumvent our issued patents or patents licensed to us so that our patent rights do not create an effective competitive barrier or revenue source. For example, on June 22, 2026, Biogen, Cold Spring Harbor Laboratory, and Ionis filed a patent infringement lawsuit in the District Court of Delaware following notice that Somerset Therapeutics, LLC had filed an Abbreviated New Drug Application, or ANDA, seeking approval to commercialize a generic version of SPINRAZA and alleging that certain patents covering SPINRAZA and its use are invalid or would not be infringed. If Somerset Therapeutics obtains a favorable ruling in such lawsuit, our revenues from SPINRAZA could be materially adversely affected.

We cannot be certain that the U.S. Patent and Trademark Office, or U.S. PTO, and courts in the U.S. or the patent offices and courts in foreign countries will consider the claims in our patents and applications covering our commercial medicines, or any of our medicines in development, as patentable. Method-of-use patents protect the use of a product for the specified method. This type of patent does not prevent a competitor from making and marketing a product that is identical to our product for an indication that is outside the scope of the patented method. Moreover, even if competitors do not actively promote their product for our targeted indications, physicians may prescribe these products off-label. Although off-label prescriptions may infringe or contribute to the infringement of method-of-use patents, the practice is common and such infringement is difficult to prevent, even through legal action.

If we or any licensor partner loses or cannot obtain patent protection for our commercial medicines or any of our medicines in development, it could have a material adverse impact on our business.

**Intellectual property litigation could be expensive and prevent us from pursuing our programs.***

From time to time, we have to defend our intellectual property rights. If we are involved in an intellectual property dispute, we may need to litigate to defend our rights or assert them against others. Disputes can involve arbitration, litigation or proceedings declared by the U.S. PTO or the International Trade Commission or foreign patent authorities. Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. For example, in September 2025, we filed a claim against Arrowhead Pharmaceuticals, Inc., or Arrowhead, for patent infringement over Arrowhead's commercialization of plozasiran, and Arrowhead filed a counterclaim against us seeking to invalidate that same patent. We are also a party to ongoing litigation involving a third party seeking regulatory approval to commercialize a generic version of SPINRAZA in the U.S. as described above. For details regarding these proceedings, refer to Part II, Item 1, *Legal Proceedings*.

If a third party claims that our medicines or technology infringe its patents or other intellectual property rights, we may have to discontinue an important product or product line, alter our products and processes, pay license fees or cease certain activities. We may not be able to obtain a license to needed intellectual property on favorable terms, if at all. There are many patents issued or applied for in the biotechnology industry, and we may not be aware of patents or patent applications held by others that relate to our business. This is especially true since patent applications in the U.S. are filed confidentially for the first 18 months. Moreover, the validity and breadth of biotechnology patents involve complex legal and factual questions for which important legal issues remain.





*Risks related to product liability*

**We are exposed to potential product liability claims, and insurance against these claims may not be available to us at a reasonable rate in the future or at all.**

Our business exposes us to potential product liability risks that are inherent in the testing, manufacturing, marketing and sale of therapeutic products, including potential product liability claims related to our commercial medicines and our medicines in development. We have clinical study insurance coverage and commercial product liability insurance coverage. However, this insurance coverage may not be adequate to cover claims against us, or be available to us at an acceptable cost, if at all. Regardless of their merit or eventual outcome, product liability claims may result in decreased demand for our medicines, injury to our reputation, withdrawal of clinical study volunteers and loss of revenues. Thus, whether or not we are insured, a product liability claim or product recall may result in losses that could be material.

*Risks related to our personnel*

**The loss of key personnel, or the inability to attract and retain highly skilled personnel, could make it more difficult to run our business and reduce our likelihood of success.**

We are dependent on the principal members of our management, scientific and commercial staff. We do not have employment agreements with any of our employees that would prevent them from leaving us. The loss of our key management, scientific or commercial employees might slow the achievement of important research and development or commercial goals. It is also critical to our success that we recruit and retain qualified scientific personnel to perform research and development work and that we recruit and retain qualified marketing, sales, market access, distribution, and related personnel to commercialize our medicines. We may not be able to attract and retain skilled and experienced personnel on acceptable terms because of intense competition for experienced personnel among many pharmaceutical and health care companies, universities and non-profit research institutions. In addition, failure to succeed in clinical studies or in commercializing our medicines may make it more challenging to recruit and retain qualified personnel.

*Risks related to health epidemics, climate change and other events*

**Our business may be adversely affected by health epidemics, climate change, extreme weather events, fires, earthquakes, war, civil or political unrest, terrorism or disruptions of the U.S. government.***

Our business could be adversely affected by health epidemics in regions where we or our partners are commercializing our medicines, have concentrations of clinical trial sites or other business operations, and could cause disruption in the operations of third-party manufacturers and contract research organizations upon whom we rely. For example, enrollment in some of our clinical trials was delayed due to the COVID-19 pandemic.

In recent years, extreme weather events and changing weather patterns have become more common. As a result, we are potentially exposed to varying natural

disaster or extreme weather risks such as fires, hurricanes, tornadoes, droughts, floods, or other events that may result from the impact of climate change on the environment, any of which could impact our business and manufacturing operations. The potential impacts of climate change may also include increased operating costs associated with additional regulatory requirements and investments in reducing energy, water use and greenhouse gas emissions. In addition, we currently manufacture most of our research and clinical supplies in a manufacturing facility located in Carlsbad, California, and various regions within California have experienced numerous catastrophic wildfires. We manufacture the finished drug product for TRYNGOLZA, DAWNZERA, WAYLIVRA, and ZANVASTRO at third-party contract manufacturers. Biogen manufactures the finished drug product for SPINRAZA and QALSODY, AstraZeneca is responsible for WAINUA's commercial drug supply, and GSK is responsible for HIBSAGO's commercial drug supply. The facilities and the equipment we, our partners and our contract manufacturers use to research, develop and manufacture our medicines would be costly to replace and could require substantial lead time to repair or replace.

Our facilities or those of our partners or contract manufacturers may be harmed by natural disasters or other events outside our control, such as earthquakes, war, civil or political unrest, deliberate acts of sabotage, terrorism or industrial accidents such as fire and explosion, whether due to human or equipment error, and if such facilities are affected by a disaster or other event, our development and commercialization efforts would be delayed. Although we possess property damage and business interruption insurance coverage, this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all.





In addition, our development and commercialization activities could be harmed or delayed by staffing shortages or a shutdown or other significant disruption of the U.S. government, including the FDA or the U.S. PTO.

***Risks related to personal information, cybersecurity, social media and artificial intelligence***

**We are dependent on data as well as information technology systems and infrastructure, which exposes us to data protection risks.***

We are dependent upon our own and third-party data as well as information technology systems and infrastructure, including mobile technologies, to operate our business. The personal information we process subjects us to stringent and evolving U.S. and foreign laws, rules and regulations, contractual obligations, industry standards and other obligations related to data privacy and security. Our obligations (including in relation to personal information) require us to maintain certain practices, including those in relation to cross-border transfers of data. The multitude and complexity of our information technology systems and infrastructure (including those of third parties with whom we work) make them vulnerable to a variety of evolving threats that may result in systems or data interruption, corruption, destruction, disruption of data integrity, malicious intrusion, or random attacks or other compromise (such as due to malfunctions, software vulnerabilities, natural disasters, telecommunications failures, malicious actors and personnel error). Data privacy or security incidents or breaches pose a risk that sensitive data, including our intellectual property, trade secrets or personal information of our employees, patients, customers or other business partners may be exposed to unauthorized persons. Like other companies in our industry, we have, from time to time, experienced threats to and security incidents related to our data and systems, including phishing/vishing attacks and attacks to the security of the systems of our third-party vendors and service providers.

Cyber-attacks are increasing in their frequency, sophistication and intensity, particularly as companies (including us) continue to leverage remote work structures. Advances in artificial intelligence, and our and our third parties' increased use of artificial intelligence, may heighten certain risks, including adversarial attacks, data leaks and unauthorized access, and may enhance bad actors' ability to conduct cyber-attacks more quickly and at greater scale. In addition, the number and frequency of cybersecurity events globally may be heightened during times of geopolitical tension or instability between countries, including, for example, the ongoing conflicts in Eastern Europe and the Middle East, as well as related political or economic responses and counter-responses by various global actors.

Cybersecurity related events could include the deployment or use of harmful malware or malicious code, denial-of-service attacks, credential stuffing attacks, credential harvesting attacks, social engineering attacks (including deep fakes and phishing/vishing attacks), ransomware and other means to affect, as applicable, the confidentiality, privacy, security, integrity or availability of our data as well as information systems and infrastructure (including that of third parties with whom we work). Our current, past and prospective business partners face similar risks and any security breaches of their systems (or those of third parties upon which they rely) could adversely affect our security posture. A security breach or a violation of obligations related to privacy or cybersecurity (including perceived breaches or violations) could result in any of the following, any of which could disrupt our business and result in increased costs or loss of revenue:

- harm our reputation;
- delay progress on the development of our medicines;
- compel us to comply with applicable security or data breach notification obligations (including laws);
- result in the diversion of monetary funds and other company resources;
- subject us to financial or other penalties, regulatory investigations or actions, including mandatory and costly corrective actions, and otherwise subject us to litigation or other liabilities; and
- require us to verify the correctness of database contents.

Risk mitigation strategies such as liability limitations in our contracts and insurance coverage may prove inadequate if there is a security breach or privacy violation. We do not maintain cyber insurance. While we have invested, and continue to invest, in the protection of our data and information technology systems and infrastructure as well as our compliance with relevant privacy and cybersecurity obligations, our efforts may not be successful. Non-compliance with relevant data protection obligations or a failure to secure our data, information technology systems or infrastructure could adversely affect our business and operations and result in the loss of critical or sensitive information, which could result in financial, legal, business or reputational harm to us.





**The increasing use of social media platforms presents new risks and challenges.**

Social media is increasingly being used to communicate about our medicines and the diseases our therapies are designed to treat. Social media practices in the biopharmaceutical industry continue to evolve and regulations relating to such use are not always clear and create uncertainty and risk of noncompliance with regulations applicable to our business. Despite our efforts to provide guidelines and training to our employees regarding social media use and monitor social media communications, there is risk that the unauthorized use of social media by our employees to communicate about our products or business, or any inadvertent disclosure of material, nonpublic information through these means, may result in violations of applicable laws and regulations, which may result in significant legal and financial exposure and reputational damages that could have a material adverse impact on our business. Furthermore, negative posts or comments about us or our medicines on social media could seriously damage our reputation, brand image and goodwill. If any of these events were to occur or we otherwise fail to comply with applicable regulations, we could incur liability, face restrictive regulatory actions or incur other harm to our business.

**We use artificial intelligence in certain aspects of our business, and challenges with properly managing its use could adversely affect our business.**

We incorporate artificial intelligence, or AI, solutions into certain aspects of our business, and applications of AI may become important in our operations over time. Our competitors or other third parties may incorporate AI into their businesses more quickly or more successfully than us, which could impair our ability to compete effectively and adversely affect our results of operations.

There are also significant risks involved in developing and deploying AI, and there can be no assurance that the usage of AI will enhance our medicines or the discovery or development of our product candidates or be beneficial to our business, including our efficiency or profitability. It is also uncertain how various laws will apply to content generated by AI. Various government authorities have proposed or enacted laws governing the development and use of AI technologies. We are subject to the risks of new or enhanced governmental or regulatory scrutiny, litigation, or other legal liability, ethical concerns, negative consumer perceptions as to automation and AI, or other complications that could adversely affect our business, reputation, or financial results.

***Risks related to our securities and the global credit markets***

**If we do not progress in our programs as anticipated, the price of our securities could decrease.**

For planning purposes, we estimate and may disclose the timing of a variety of clinical, regulatory and other milestones, such as when we anticipate a certain medicine will enter clinical trials, when we anticipate disclosing clinical data, when we anticipate completing a clinical study, when we anticipate filing an application for, or obtaining, marketing authorization, or when we or our partners plan to commercially launch a medicine. We base our estimates on present facts and a variety of assumptions, many of which are outside of our control. If we do not achieve milestones in accordance with our or our investors' or securities analysts' expectations, including milestones related to our commercial medicines and medicines in development, the price of our securities could decrease. In addition, our share price may be dependent upon the valuations and recommendations of the analysts who cover our business. If our results do not meet these analysts' forecasts, the expectations of our investors or the financial guidance we provide to investors in any period, the market price of our common stock could decline. Our ability to meet analysts' forecasts, investors' expectations and our financial guidance is substantially dependent on our ability to maintain or increase sales of our commercial medicines, both partnered and unpartnered.

**If the price of our securities continues to be highly volatile, this could make it harder to liquidate your investment and could increase your risk of suffering a loss.**

The market price of our common stock, like that of the securities of many other biopharmaceutical companies, has been and is likely to continue to be highly volatile. These fluctuations in our common stock price may significantly affect the trading price of our securities. During the 12 months preceding September 30, 2026, the closing market price of our common stock ranged from $86.50 to $43.81 per share. Many factors can affect the market price of our securities, including, for example, fluctuations in our operating results, financing transactions, announcements related to collaborations, clinical study results, technological innovations or new products being developed by us or our competitors, the commercial success of our approved medicines, governmental regulation, marketing authorizations, changes in payers' reimbursement policies, developments in patent or other proprietary rights and public concern regarding the safety of our medicines.



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Broad market factors may materially harm the market price of our common stock irrespective of our operating performance. For example, events such as recent tariffs announcements and the ongoing conflicts in Eastern Europe and the Middle East have caused disruptions of global financial markets and resulted in increased volatility in the trading price of our common stock. In addition, industry factors may materially harm the market price of our common stock. Nasdaq, and the market for biotechnology companies in particular, have historically experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of the particular companies affected. The trading prices and valuations of these stocks, and of ours, may not be predictable. A loss of investor confidence in the market for biotechnology or pharmaceutical stocks or the stocks of other companies that investors perceive to be similar to us, the opportunities in the biotechnology and pharmaceutical market or the stock market in general, could depress our stock price regardless of our business, prospects, financial conditions or results of operations.

**Negative conditions in the global economy, credit markets and financial services and other industries may adversely affect our business, financial condition or stock price.***

The global economy, credit and financial markets have experienced extreme volatility and disruptions recently, including as a result of tariffs announcements and the ongoing conflicts in Eastern Europe and the Middle East. These disruptions can result in severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates, increases in inflation rates, disruptions of the global supply chain and energy markets and uncertainty about economic stability. Any such volatility and disruptions may have adverse consequences on us or the third parties on whom we rely. There can be no assurance that further deterioration in the global economy, credit and financial markets and confidence in economic conditions will not occur. If the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult, more costly and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our operations, growth plans, financial performance or stock price. In addition, our insurance carriers and insurance policies covering all aspects of our business may become financially unstable or may not be sufficient to cover any or all of our losses and may not continue to be available to us on acceptable terms, or at all.

A variety of risks associated with operating our business and marketing our medicines internationally, including possible unfavorable regulatory, pricing and reimbursement, political, tax and labor conditions, could adversely affect our business. We or our partners are commercializing several medicines in countries outside the U.S. Because we have international operations, we are subject to numerous risks associated with international business activities, including:

- compliance with differing or unexpected regulatory requirements for our medicines and foreign employees;
- complexities associated with managing multiple payer reimbursement regimes, government payers or patient self-pay systems;
- difficulties in staffing and managing foreign operations;
- in certain circumstances, increased dependence on the commercialization efforts and regulatory compliance of third-party distributors or strategic partners;
- foreign government taxes, regulations and permit requirements;
- U.S. and foreign government tariffs, trade and export restrictions, price and exchange controls and other regulatory requirements;
- U.S. restrictions on the use of certain foreign biotech equipment and service providers, such as those set forth in the BIOSECURE Act;
- anti-corruption laws, including the Foreign Corrupt Practices Act, or the FCPA, and its equivalent in foreign jurisdictions;
- economic weakness, including inflation, natural disasters, war, acts of terrorism, political instability or public health issues or health epidemics, in particular foreign countries or globally;
- fluctuations in currency exchange rates, which could result in increased operating expenses and reduced revenue, and other obligations related to doing business in another country;
- the potential for a local seller, faced with higher local prices, importing medicines from an international market with lower prices rather than buying such medicines locally, which is referred to as parallel importation;
- compliance with tax, employment, privacy, immigration and labor laws, regulations and restrictions for employees living or traveling abroad;
- workforce uncertainty in countries where labor unrest is more common than in the U.S.; and
- changes in diplomatic and trade relationships.



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Our business activities outside of the U.S. are subject to the FCPA and similar anti-bribery or anti-corruption laws, regulations or rules of other countries in

which we operate, including the United Kingdom's Bribery Act 2010. In many other countries, the healthcare providers who prescribe pharmaceuticals are employed by their government, and the purchasers of pharmaceuticals are government entities; therefore, any dealings with these prescribers and purchasers may be subject to regulation under the FCPA. There is no certainty that all employees and third-party business partners (including our contract research organizations, contract manufacturing organizations, distributors, wholesalers, agents, contractors and other partners) will comply with anti-bribery laws. Importantly, we do not control the actions of manufacturers and other third-party agents, although we may be liable for their actions. Violation of these laws may result in civil or criminal sanctions, which could include monetary fines, criminal penalties, and disgorgement of past profits, which could have an adverse impact on our business and financial condition.

**Provisions in our certificate of incorporation, bylaws and convertible notes documents and Delaware law may prevent stockholders from receiving a premium for their shares.***

Our certificate of incorporation provides for classified terms for the members of our board of directors. Our certificate also includes a provision that requires at least 66 2/3 percent of our voting stockholders to approve a merger or certain other business transactions with, or proposed by, any holder of 15 percent or more of our voting stock, except in cases where certain directors approve the transaction or certain minimum price criteria and other procedural requirements are met.

Our certificate of incorporation also requires that any action required or permitted to be taken by our stockholders must be taken at a duly called annual or special meeting of stockholders and may not be taken by written consent. In addition, only our board of directors, chairperson of the board or chief executive officer can call special meetings of our stockholders. We have in the past, and may in the future, implement a stockholders' rights plan, also called a poison pill, which could make it uneconomical for a third party to acquire our company on a hostile basis. In addition, our board of directors has the authority to fix the rights and preferences of, and issue shares of preferred stock, which may have the effect of delaying or preventing a change in control of our company without action by our stockholders.

The provisions of our convertible senior notes could make it more difficult or more expensive for a third party to acquire us. Upon the occurrence of certain transactions constituting a fundamental change, holders of the notes will have the right, at their option, to require us to repurchase all of their notes or a portion of their notes, which may discourage certain types of transactions in which our stockholders might otherwise receive a premium for their shares over the then-current market prices. As of September 30, 2026, we had two outstanding convertible senior notes, our 0% Notes due 2030, which mature in December 2030, and our 1.75% Notes due 2028, which mature in June 2028.

These provisions, as well as Delaware law, including Section 203 of the Delaware General Corporation Law, and other of our agreements, may discourage certain types of transactions in which our stockholders might otherwise receive a premium for their shares over then-current market prices, and may limit the ability of our stockholders to approve transactions that they think may be in their best interests.

**Future sales of our common stock in the public market could adversely affect the trading price of our securities.***

Future sales of substantial amounts of our common stock in the public market, or the perception that such sales could occur, could adversely affect trading prices of our securities. For example, we may issue approximately 18.6 million shares of our common stock upon conversion of our 0% Notes due 2030 and 1.75% Notes due 2028.

***Risks related to compliance with laws***

**Our operations are subject to extensive legal and regulatory requirements affecting the health care industry.**

Our operations are subject to extensive legal and regulatory requirements affecting the health care industry, including federal, state, and foreign fraud and abuse (including anti-kickback laws and false claims laws), transparency laws, such as the federal Sunshine Act, and health information privacy and security laws, which are subject to change at any time. It is possible that government authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. Penalties for violations of applicable healthcare laws and regulations may include significant civil, criminal and administrative penalties, damages, disgorgement, fines, imprisonment, exclusion of products from government funded healthcare programs, such as Medicare and Medicaid, and additional reporting requirements and oversight if we enter into a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws. In addition, violations may also result in reputational harm, diminished profits and future earnings.



**Because we use biological materials, hazardous materials, chemicals and radioactive compounds, if we do not comply with laws regulating the protection of the environment and health and human safety, our business could be adversely affected.**

Our research, development and manufacturing activities involve the use of potentially harmful biological materials as well as materials, chemicals and various radioactive compounds that could be hazardous to human health and safety or the environment. We store most of these materials and various wastes resulting from their use at our facilities in Carlsbad, California pending ultimate use and disposal. We cannot completely eliminate the risk of contamination, which could cause:

- interruption of our research, development and manufacturing efforts;
- injury to our employees and others;
- environmental damage resulting in costly clean up; and
- liabilities under federal, state and local laws and regulations governing health and human safety, as well as the use, storage, handling and disposal of these materials and resultant waste products.

In such an event, we may be held liable for any resulting damages, and any liability could exceed our resources. Although we carry insurance for pollution liability in amounts and types that we consider commercially reasonable, the coverage or coverage limits of our insurance policies may not be adequate. If our losses exceed our insurance coverage, our financial condition would be adversely affected.

**Our business is subject to changing regulations for corporate governance and public disclosure that has increased both our costs and the risk of noncompliance.**

Each year we are required to evaluate our internal control systems to allow management to report on, and our Independent Registered Public Accounting Firm to attest to, our internal controls as required by Section 404 of the Sarbanes-Oxley Act. As a result, we continue to incur additional expenses and divert our management's time to comply with these regulations. In addition, if we cannot continue to comply with the requirements of Section 404 in a timely manner, we might be subject to sanctions or investigation by regulatory authorities, such as the SEC, the Public Company Accounting Oversight Board, or PCAOB, or The Nasdaq Global Select Market. Any such action could adversely affect our financial results and the market price of our common stock.

The SEC and other regulators have continued to adopt new rules and regulations and make additional changes to existing regulations that require our compliance. In July 2010, the Dodd-Frank Wall Street Reform and Protection Act, or the Dodd-Frank Act, was enacted, and in August 2022, the SEC adopted additional rules and regulations under the Dodd-Frank Act related to "say on pay" and proxy access. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which has and may in the future lead to additional compliance costs and impact the manner in which we operate our business.

*Risks related to taxes*

**Our ability to use our net operating loss carryovers and certain other tax attributes may be limited.**

Under the Internal Revenue Code of 1986, as amended, or the Code, a corporation is generally allowed a deduction for net operating losses, or NOLs, carried over from a prior taxable year. Under the Code, we can carry forward our NOLs to offset our future taxable income, if any, until such NOLs are used or expire. The same is true of other unused tax attributes, such as tax credits.

Under the current U.S. federal income tax law, U.S. federal NOLs generated in taxable years beginning after December 31, 2017 may be carried forward indefinitely, but the deductibility of such U.S. federal NOLs is limited to 80 percent of taxable income.

In addition, under Sections 382 and 383 of the Code, and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than 50 percentage-point cumulative change, by value, in its equity ownership over a three-year period, the corporation's ability to use its pre-change NOL carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. We may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which may be outside of our control. If an ownership change occurs and our ability to use our NOL carryforwards or other tax attributes is materially limited, it would harm our future operating results by effectively increasing our future tax obligations. As a result of our merger with Akcea Therapeutics, Inc. in 2020, or the Akcea Merger, we are subject to the separate return limitation year, or SRLY, rules. Under the SRLY rules, our utilization of Akcea's pre-merger NOL and tax credit carryforwards is limited to the amount of income that Akcea contributes to our consolidated taxable income. The Akcea pre-merger tax attributes cannot be used to offset any of the income that Ionis contributes to our consolidated taxable income. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For example, in June 2024, California enacted Senate Bill 167, or SB 167, which, with certain exceptions, suspends the ability to use California net operating losses to offset California income and limits the ability to use California business tax credits to offset California taxes, for taxable years beginning after 2023 and before 2027.



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**Our future taxable income could be impacted by changes in tax laws, regulations and treaties.**

A change in tax laws, treaties or regulations, or their interpretation, of any country in which we operate could materially affect us.

**We could be subject to additional tax liabilities.**

We are subject to U.S. federal, state, local and foreign income taxes, sales taxes in the U.S., withholding taxes and transaction taxes in foreign jurisdictions. Significant judgment is required in evaluating our tax positions and our worldwide provision for taxes. During the ordinary course of business, there are many activities and transactions for which the ultimate tax determination is uncertain. In addition, our tax obligations and effective tax rates could be adversely affected by changes in the relevant tax, accounting and other laws, regulations, principles and interpretations, including those relating to income tax nexus, by recognizing tax losses or lower than anticipated earnings in jurisdictions where we have lower statutory rates and higher than anticipated earnings in jurisdictions where we have higher statutory rates, by changes in foreign currency exchange rates, or by changes in the valuation of our deferred tax assets and liabilities. In particular, our tax obligations and effective tax rate in the jurisdictions in which we conduct business could increase in the future as a result of the base erosion and profit shifting, or BEPS, project led by the Organization for Economic Co-operation and Development, or OECD, and other initiatives led by the OECD or the European Commission. The OECD is leading work on an iteration of the BEPS project based on two "pillars" (subject to certain revenue thresholds), involving, among other measures, the reallocation of taxing rights in respect of certain multinational enterprises above a fixed profit margin to the jurisdictions in which they carry on business (referred to as "Pillar One") and imposition of a minimum effective corporate tax rate on certain multinational enterprises (referred to as "Pillar Two"). A number of countries in which we conduct business have enacted, or are in the process of enacting, core elements of the Pillar Two rules (with further provisions expected to be enacted in the future). Based on the minimum revenue thresholds we currently expect to fall within the scope of these requirements in the near term. The OECD has issued (and is expected to continue to issue further) administrative guidance providing transition and safe harbor rules in relation to the implementation of the Pillar Two proposal. For example, in January 2026, the OECD issued administrative guidance providing for, among other things, a side-by-side framework intended to limit the application of Pillar Two top-up taxes to U.S.-parented groups; however, the ultimate impact will depend on jurisdictional adoption and further guidance. We are monitoring developments and evaluating the potential impacts of the Pillar Two rules, including on our effective tax rates, and considering our eligibility to qualify for these safe harbor rules (including under the proposed "side-by-side" arrangement).

We may be audited in various jurisdictions, and such jurisdictions may assess additional income, sales and value-added or other taxes against us. In addition, we are currently under examination by the Internal Revenue Service for tax year 2023. Although we believe our tax estimates are reasonable, the final determination of any tax audits or litigation could be materially different from our historical tax provisions and accruals, which could have a material adverse effect on our operating results or cash flows in the period for which a determination is made.

## ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Not applicable.

## ITEM 3. DEFAULT UPON SENIOR SECURITIES

Not applicable.

## ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

## ITEM 5. OTHER INFORMATION

**Trading Plans**

During the quarter ended September 30, 2026, our directors and officers (as defined in Rule 16a-1(f) under the Exchange Act), or Section 16 officers and directors, did not adopt or terminate contracts, instructions or written plans for the purchase or sale of our securities.



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## ITEM 6. EXHIBITS

a. Exhibits

| Exhibit Number | Description of Document |
|---|---|
| 10.1 | Form of Global Restricted Stock Unit Agreement for restricted stock units granted under the Amended and Restated Ionis Pharmaceuticals, Inc. 2011 Equity Incentive Plan. |
| 10.2 | Form of Global Option Agreement for stock options granted under the Amended and Restated Ionis Pharmaceuticals, Inc. 2011 Equity Incentive Plan. |
| 10.3 | UK Sub-Plan to the Amended and Restated Ionis Pharmaceuticals, Inc. 2011 Equity Incentive Plan. |
| 31.1 | Certification by Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended. |
| 31.2 | Certification by Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended. |
| 32.1* | Certification Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |
| 101 | The following financial statements from the Ionis Pharmaceuticals, Inc. Quarterly Report on Form 10-Q for the quarter ended September 30, 2026, formatted in Inline Extensible Business Reporting Language (iXBRL): (i) condensed consolidated balance sheets, (ii) condensed consolidated statements of operations, (iii) condensed consolidated statements of comprehensive loss, (iv) condensed consolidated statements of stockholders' equity, (v) condensed consolidated statements of cash flows and (vi) notes to condensed consolidated financial statements (detail tagged). |
| 104 | Cover Page Interactive Data File (formatted in iXBRL and included in exhibit 101). |

* This certification is deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended.



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**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

| Signatures | Title | Date |
|---|---|---|
| /s/ BRETT P. MONIA<br>Brett P. Monia, Ph.D. | Director and Chief Executive Officer<br>(Principal executive officer) | November 9, 2026 |
| /s/ ELIZABETH L. HOUGEN<br>Elizabeth L. Hougen | Executive Vice President, Finance and Chief Financial Officer<br>(Principal financial and accounting officer) | November 9, 2026 |