
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934

(Amendment No. 3)*

MBX Biosciences, Inc.

(Name of Issuer)

COMMON STOCK

(Title of Class of Securities)

(CUSIP Number)

OrbiMed Advisors LLC
601 Lexington Avenue, 54th Floor,
New York, NY, 10022
(212) 739-6400

OrbiMed Capital GP VII LLC
601 Lexington Avenue, 54th Floor,
New York, NY, 10022
(212) 739-6400

OrbiMed Genesis GP LLC
601 Lexington Avenue, 54th Floor,
New York, NY, 10022
(212) 739-6400

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)
08/06/2026

(Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box. ☐

The information required on the remainder of this cover page shall not be deemed to be “filed” for the purpose of Section 18 of the Securities Exchange Act of 1934 (“Act”) or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

SCHEDULE 13D

CUSIP No.

1	Name of reporting person
	ORBIMED ADVISORS LLC
	Check the appropriate box if a member of a Group (See Instructions)
2	☐ (a)
	☐ (b)
3	SEC use only
4	Source of funds (See Instructions)
	AF
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)
	☐
6	Citizenship or place of organization
	DELAWARE
	Sole Voting Power
7	0.00
Number of	Shared Voting Power
Shares	
Beneficially	8 3,074,853.00
Owned by	
Each	Sole Dispositive Power
Reporting	9 0.00
Person	
With:	Shared Dispositive Power
	10 3,074,853.00
	Aggregate amount beneficially owned by each reporting person
11	3,074,853.00
	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)
12	☐
	Percent of class represented by amount in Row (11)
13	6.4 %
	Type of Reporting Person (See Instructions)
14	IA

SCHEDULE 13D

CUSIP No.

1	Name of reporting person
	ORBIMED CAPITAL GP VII LLC
	Check the appropriate box if a member of a Group (See Instructions)
2	☐ (a)
	☐ (b)

3	SEC use only
4	Source of funds (See Instructions)
4	AF
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)
5	☐
6	Citizenship or place of organization
6	DELAWARE
7	Sole Voting Power
7	0.00
Number of Shares Beneficially Owned by Each Reporting Person With:	Shared Voting Power
8	2,505,150.00
9	Sole Dispositive Power
9	0.00
10	Shared Dispositive Power
10	2,505,150.00
11	Aggregate amount beneficially owned by each reporting person
11	2,505,150.00
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)
12	☐
13	Percent of class represented by amount in Row (11)
13	5.2 %
14	Type of Reporting Person (See Instructions)
14	OO

SCHEDULE 13D

CUSIP No.

1	Name of reporting person
1	ORBIMED GENESIS GP LLC
2	Check the appropriate box if a member of a Group (See Instructions)
2	☐ (a)
2	☐ (b)
3	SEC use only
4	Source of funds (See Instructions)
4	AF
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)
5	☐
6	Citizenship or place of organization
6	DELAWARE
Number of Shares Beneficially	Sole Voting Power
7	0.00

Owned by Each Reporting Person With:	8	Shared Voting Power
	569,703.00	
		Sole Dispositive Power
	9	
	0.00	
		Shared Dispositive Power
	10	
	569,703.00	
		Aggregate amount beneficially owned by each reporting person
11	569,703.00	
		Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)
12	☐	
		Percent of class represented by amount in Row (11)
13	1.2 %	
		Type of Reporting Person (See Instructions)
14	OO	

SCHEDULE 13D

Item 1. Security and Issuer

Title of Class of Securities:

(a) COMMON STOCK

Name of Issuer:

(b) MBX Biosciences, Inc.

Address of Issuer's Principal Executive Offices:

(c) 11711 N. Meridian Street, Suite 300, Carmel, INDIANA , 46032.

Item 1 Comment: This Amendment No. 3 ("Amendment No. 3") to Schedule 13D supplements and amends the Statement on Schedule 13D of OrbiMed Advisors LLC ("OrbiMed Advisors"), OrbiMed Capital GP VII LLC, ("GP VII"), and OrbiMed Genesis GP LLC ("OrbiMed Genesis") (collectively, the "Reporting Persons") originally filed with the Securities and Exchange Commission (the "SEC") on September 23, 2024 and amended by Amendment No. 1 thereto filed with the SEC on September 30, 2025 and Amendment No. 2 thereto filed with the SEC on February 11, 2026. This Amendment No. 3 is being filed to report that as a result of the transactions described in Item 5 below, the beneficial ownership of the outstanding Shares that the Reporting Persons may be deemed to beneficially own decreased by more than 1%.

Item 2. Identity and Background

OrbiMed Advisors is a limited liability company organized under the laws of Delaware and a registered investment adviser under the Investment Advisers Act of 1940, as amended. GP VII is a limited liability company organized under the laws of Delaware. OrbiMed Genesis is a limited liability company organized under the laws of Delaware.

(a) Carl L. Gordon is a United States citizen. W. Carter Neild is a United States citizen. Geoffrey C. Hsu is a United States citizen. C. Scotland Stevens is a United States citizen. David P. Bonita is a United States citizen. Peter A. Thompson is a United States citizen. Matthew S. Rizzo is a United States citizen. Mona Ashiya is a United States citizen. Trey Block is a United States citizen.

(b) 601 Lexington Avenue, 54th Floor, New York, New York 10022.

OrbiMed Advisors is the managing member or general partner of certain entities as more particularly described in Item 6 below. GP VII is the general partner of a limited partnership as more particularly described in Item 6 below. OrbiMed Genesis is the general partner of a limited partnership as more particularly described in Item 6 below. Carl L. Gordon is a member of OrbiMed Advisors. W. Carter Neild is a member of OrbiMed Advisors. Geoffrey C. Hsu is a member of OrbiMed Advisors. C. Scotland Stevens is a member of OrbiMed Advisors. David P. Bonita is a member of OrbiMed Advisors. Peter A. Thompson is a member of OrbiMed Advisors. Matthew S. Rizzo is a member of OrbiMed Advisors. Mona Ashiya is a member of OrbiMed Advisors. Trey Block is the Chief Financial Officer of OrbiMed Advisors.

(d) Not applicable.

- (e) Not applicable.
- (f) Item 2(a) is incorporated herein by reference.

Item 3. Source and Amount of Funds or Other Consideration
Not applicable.

Item 4. Purpose of Transaction

The Reporting Persons from time to time intend to review their investment in the Issuer on the basis of various factors, including the Issuer's business, financial condition, results of operations and prospects, general economic and industry conditions, the securities markets in general and those for the Issuer's Shares in particular, as well as other developments and other investment opportunities. Based upon such review, the Reporting Persons will take such actions in the future as the Reporting Persons may deem appropriate in light of the circumstances existing from time to time. If the Reporting Persons believe that further investment in the Issuer is attractive, whether because of the market price of Shares or otherwise, they may acquire Shares or other securities of the Issuer either in the open market or in privately negotiated transactions. Similarly, depending on market and other factors, the Reporting Persons may determine to dispose of some or all of the Shares currently owned by the Reporting Persons or otherwise acquired by the Reporting Persons either in the open market or in privately negotiated transactions. Except as set forth in this Schedule 13D, the Reporting Persons have not formulated any plans or proposals which relate to or would result in: (a) the acquisition by any person of additional securities of the Issuer or the disposition of securities of the Issuer, (b) an extraordinary corporate transaction, such as a merger, reorganization or liquidation, involving the Issuer or any of its subsidiaries, (c) a sale or transfer of a material amount of the assets of the Issuer or any of its subsidiaries, (d) any change in the present Board of Directors or management of the Issuer, including any plans or proposals to change the number or term of directors or to fill any existing vacancies on the board, (e) any material change in the Issuer's capitalization or dividend policy of the Issuer, (f) any other material change in the Issuer's business or corporate structure, (g) any change in the Issuer's charter or bylaws or other instrument corresponding thereto or other action which may impede the acquisition of control of the Issuer by any person, (h) causing a class of the Issuer's securities to be deregistered or delisted from a national securities exchange or to cease to be authorized to be quoted in an inter-dealer quotation system of a registered national securities association, (i) a class of equity securities of the Issuer becoming eligible for termination of registration pursuant to Section 12(g)(4) of the Act or (j) any action similar to any of those enumerated above.

Item 5. Interest in Securities of the Issuer

The following disclosure is based upon 48,160,096 outstanding Shares, as set forth in the Issuer's Quarterly Report on Form 10-Q filed with the SEC on August 6, 2026. As of the date of this filing, OrbiMed Private Investments VII, LP ("OPI VII"), a limited partnership organized under the laws of Delaware, holds 2,505,150 Shares, constituting approximately 5.2% of the issued and outstanding Shares. GP VII is the general partner of OPI VII, pursuant to the terms of the limited partnership agreement of OPI VII, and OrbiMed Advisors is the managing member of GP VII, pursuant to the terms of the limited liability company agreement of GP VII. As a result, OrbiMed Advisors and GP VII share power to direct the vote and disposition of the Shares held by OPI VII and may be deemed directly or indirectly, including by reason of their mutual affiliation, to be the beneficial owners of the Shares held by OPI VII. OrbiMed Advisors exercises this investment and voting power through a management committee comprised of Carl L. Gordon, W. Carter Neild, and Geoffrey C. Hsu, each of whom disclaims beneficial ownership of the Shares held by OPI VII. In addition, OrbiMed Advisors and GP VII, pursuant to their authority under the limited partnership agreement of OPI VII, caused OPI VII to enter into the agreements referred to in Item 6 below. As of the date of this filing, OrbiMed Genesis Master Fund, L.P. ("Genesis"), a limited partnership organized under the laws of the Cayman Islands, holds 569,703 Shares, constituting approximately 1.2% of the issued and outstanding Shares. OrbiMed Genesis is the general partner of Genesis, pursuant to the terms of the limited partnership agreement of Genesis, and OrbiMed Advisors is the managing member of OrbiMed Genesis, pursuant to the terms of the limited liability company agreement of OrbiMed Genesis. As a result, OrbiMed Advisors and OrbiMed Genesis share power to direct the vote and disposition of the Shares held by Genesis and may be deemed, directly or indirectly, including by reason of their mutual affiliation, to be the beneficial owners of the Shares held by Genesis. OrbiMed Advisors exercises this investment and voting power through a management committee comprised of Carl L. Gordon, W. Carter Neild, and Geoffrey C. Hsu, each of whom disclaims beneficial ownership of the Shares held by Genesis. In addition, OrbiMed Advisors and OrbiMed Genesis, pursuant to their authority under the limited partnership agreement of Genesis, caused Genesis to enter into the agreements referred to in Item 6 below.

(a) Item 5(a) is incorporated by reference herein.

On June 29, 2026, GEN sold 80,200 Shares at a price of \$53.48. On June 30, 2026, OPI VII sold 120,546 Shares at a price of \$55.53. On June 30, 2026, OPI VII sold 8,405 Shares at a price of \$56.43. On July 1, 2026, OPI VII sold 97,001 Shares at a price of \$56.54. On July 2, 2026, OPI VII sold 95,048 Shares at a price of \$57.24. On August 5, 2026, GEN sold 7,175 Shares at a price of \$68.29. On August 5, 2026, OPI VII sold 31,500 Shares at a price of \$68.29. On August 6, 2026, GEN sold 9,874 Shares at a price of \$67.25. On August 6, 2026, OPI VII sold 43,400 Shares at a price of \$67.25. On August 7, 2026, GEN sold 12,935 Shares at a price of \$67.21. On August 7, 2026, OPI VII sold 56,950 Shares at a price of \$67.21. The Reporting Persons undertake, upon request by the staff of the SEC or the Issuer to provide full information regarding the number of Shares sold at each separate price.

(d) Not applicable.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer

In addition to the relationships between the Reporting Persons described in Items 2 and 5 above, GP VII is the

general partner of OPI VII, pursuant to the terms of the limited partnership agreement of OPI VII. Pursuant to this agreement and relationship, GP VII has discretionary investment management authority with respect to the assets of OPI VII. Such authority includes the power to vote and otherwise dispose of securities held by OPI VII. The number of outstanding Shares of the Issuer attributable to OPI VII is 2,505,150 Shares. GP VII, pursuant to its authority under the limited partnership agreement of OPI VII, may be considered to hold indirectly 2,505,150 Shares. OrbiMed Genesis is the general partner of Genesis, pursuant to the terms of the limited partnership agreement of Genesis. Pursuant to this agreement and relationship, OrbiMed Genesis has discretionary investment management authority with respect to the assets of Genesis. Such authority includes the power to vote and otherwise dispose of securities held by Genesis. The number of outstanding Shares of the Issuer attributable to Genesis is 569,703 Shares. OrbiMed Genesis, pursuant to its authority under the limited partnership agreement of Genesis, may be considered to hold indirectly 569,703 Shares. In addition to the relationships between the Reporting Persons described in Items 2 and 5 above, OrbiMed Advisors is the managing member of GP VII and OrbiMed Genesis, pursuant to the terms of the limited liability company agreements of GP VII and OrbiMed Genesis. Pursuant to these agreements and relationships, OrbiMed Advisors and GP VII have discretionary investment management authority with respect to the assets of OPI VII, and OrbiMed Advisors and OrbiMed Genesis have discretionary investment management authority with respect to the assets of Genesis. Such authority includes the power of GP VII to vote and otherwise dispose of securities held by OPI VII and OrbiMed Genesis to vote and otherwise dispose of securities held by Genesis. The number of outstanding Shares attributable to OPI VII is 2,505,150 Shares, and the number of outstanding Shares attributable to Genesis is 569,703 Shares. OrbiMed Advisors, pursuant to its authority under the terms of the limited liability company agreements of GP VII and Genesis may also be considered to hold indirectly 3,074,853 Shares. Investors' Rights Agreement In addition, OPI VII, Genesis, and certain other stockholders of the Issuer entered into a Second Amended and Restated Investors' Rights Agreement with the Issuer, dated as of August 2, 2024 (the "Investors' Rights Agreement"). Pursuant to the Investors' Rights Agreement and subject to the terms and conditions therein, the parties agreed that: Demand Registration Rights At any time beginning 180 days following the effective date of the registration statement of the IPO, the holders of at least 40% of the Issuer's registrable securities may request that the Issuer file a registration statement under the Securities Act of 1933, as amended (the "Securities Act") on a Form S-1 at the Issuer's expense, subject to certain exceptions, with an anticipated aggregate offering price, net of offering expenses, of not less than \$10 million, in which case the Issuer will be required to effect the registration as soon as practicable, and in any event within 60 days after the date of such registration request. The Issuer is not obligated to effect more than one of these registrations. Form S-3 Registration Rights At any time after the Issuer is qualified to file a registration statement on Form S-3 under the Securities Act, and subject to limitations and conditions specified in the Investors' Rights Agreement, holders of at least 20% of the registrable securities under the Investors' Rights Agreement may request that the Issuer prepare and file a registration statement on Form S-3 at the Issuer's expense covering the Shares of such holders having an anticipated aggregate offering price, net of offering expenses, of at least \$5 million, in which case the Issuer will be required to effect the registration as soon as practicable, and in any event within 45 days after receiving such request. The Issuer is not obligated to effect more than two of these registrations in any 12-month period. Piggyback Registration Rights Whenever the Issuer proposes to file a registration statement under the Securities Act, other than with respect to certain excluded registrations, OPI VII and Genesis will each be entitled to notice of the registration and have the right, subject to limitations that the underwriters may impose on the number of Shares included in the registration, to include the Shares held by them in the registration. The foregoing description of the Investors' Rights Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Investors' Rights Agreement, which is filed as Exhibits 2 and incorporated herein by reference.

Item 7. Material to be Filed as Exhibits.

Exhibit Description 1. Joint Filing Agreement among OrbiMed Advisors LLC, OrbiMed Capital GP VII LLC, and OrbiMed Genesis GP LLC. 2. Second Amended and Restated Investors' Rights Agreement among the Issuer and certain of its stockholders, dated August 2, 2024 (incorporated by reference to Exhibit 4.1 to the Issuer's Registration Statement on Form S-1/A (File No. 333-281764) filed with the SEC on September 9, 2024). <https://www.sec.gov/Archives/edgar/data/1776111/000119312524206227/d790774dex41.htm>

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

ORBIMED ADVISORS LLC

Signature: /s/ Carl L. Gordon
Name/Title: Carl L. Gordon/Member
Date: 08/10/2026

ORBIMED CAPITAL GP VII LLC

Signature: /s/ Carl L. Gordon
Name/Title: Carl L. Gordon/Member of OrbiMed Advisors LLC
Date: 08/10/2026

ORBIMED GENESIS GP LLC

Signature: /s/ Carl L. Gordon

Name/Title: Carl L. Gordon/Member of OrbiMed Advisors
LLC

Date: 08/10/2026

JOINT FILING AGREEMENT

The undersigned hereby agree that Amendment No. 3 to the Statement on Schedule 13D, dated August 6, 2026, with respect to the common stock, par value \$0.0001 per share, of MBX Biosciences, Inc. is filed on behalf of each of us pursuant to and in accordance with the provisions of Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended. Each of the undersigned agrees to be responsible for the timely filing of this Statement, and for the completeness and accuracy of the information concerning itself contained therein. This Joint Filing Agreement may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned have executed this Joint Filing Agreement as of the 10th day of August 2026.

ORBIMED ADVISORS LLC

By: /s/ Carl L. Gordon
Name: Carl L. Gordon
Title: Member

ORBIMED CAPITAL GP VII LLC

By: ORBIMED ADVISORS LLC, its managing member

By: /s/ Carl L. Gordon
Name: Carl L. Gordon
Title: Member of OrbiMed Advisors LLC

ORBIMED GENESIS GP LLC

By: ORBIMED ADVISORS LLC, its managing member

By: /s/ Carl L. Gordon
Name: Carl L. Gordon
Title: Member of OrbiMed Advisors LLC
