## FORM 4

## **UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

## STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

OMB APPROVAL

OMB Number: 3235-0287
Estimated average burden
hours per response: 0.5

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Check this box to indicate that a transaction was made pursuant to a contract, instruction or written plan for the purchase or sale of equity securities of the issuer that is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c). See Instruction 10.

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

(Last) (First) (Middle) 44 MONTGOMERY ST. 40TH FL  3. Date of Earliest Transaction (Month/Day/Year) 10/29/2024	below)	cer (give title ow)		Other (s	
				below)`	-,,
(Street) SAN FRANCISCO CA 94104  4. If Amendment, Date of Original Filed (Month/Day/Year) 6. Individ	Form filed	or Joint/Group m filed by On m filed by Mo	ne Report	ing Person	
(City) (State) (Zip)					
Date (Month/Day/Year)   Execution Date, if any Code (Instr.   Disposed Of (D) (Instr. 3, 4 and 5)   S (Month/Day/Year)   S   S	5. Amount of Securities Beneficially Following R	nount of rities ficially Owned wing Reporte	Form: d (D) or	nership : Direct · Indirect str. 4)	7. Nature of Indirect Beneficial Ownership
Code V Amount (A) or (D) Price	Price Transaction(s) (Instr. 3 and 4)			(Instr. 4)	
Common Stock, \$0.001 par value <sup>(1)</sup>		,361,803	_	D <sup>(2)</sup>	
Common Stock, \$0.001 par value <sup>(1)</sup> Common Stock, \$0.001 par value <sup>(1)</sup>	1 1	220,460	_	D <sup>(3)</sup> D <sup>(4)</sup>	
Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owne		220,100			
(e.g., puts, calls, warrants, options, convertible securities)  1. Title of   2.   3. Transaction   3A. Deemed   4.   5. Number of   6. Date Exercisable and   7. Title and Amount of   8.	8. Price of	ice of 9 Nu	mber of	10.	11. Nature
Derivative Conversion One Security Conversion One C	Derivative Security (Instr. 5)	vative deriva sirity Secur r. 5) Benef Owne Follov Report	ative rities ficially ed wing orted	Ownershi Form: Direct (D) or Indirec (I) (Instr. 4	p of Indirect Beneficial Ownership t (Instr. 4)
Code V (A) (D) Date Expiration Date Title Amount or Number of Shares		(Instr.	saction(s) r. 4)		
Pre-funded Warrants to Purchase Common Stock $^{(1)}$ $^{(5)}$ $^$	\$3.649	649 7,4	415,596	D <sup>(2)</sup>	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	\$3.649	649 6,2	235,545	D <sup>(3)</sup>	
Pre-funded Warrants to Purchase Common Stock(1)         \$0.001         10/29/2024         P         440,489         (5)         Common Stock, \$0.001 par value         440,489	\$3.649	649 83	38,507	D <sup>(4)</sup>	
Series X Convertible Preferred <sup>(1)</sup> (6)  (6)  (7)  (6)  (7)  (7)  (8)  (8)  (9)  (9)  (122,833 <sup>(7)</sup> (122,833 <sup></sup>		2	2,211	D <sup>(2)</sup>	
Series X Convertible Preferred <sup>(1)</sup> (6)  (6)  (7)  (6)  (7)  (8)  (8)  (9)  (9)  (9)  (9)  (17)  (17)  (17)  (18)  (19)  (19)  (19)  (19)  (20)  (20)  (30)  (4)  (5)  (6)  (7)  (7)  (8)  (9)  (10)		1	1,739	D <sup>(3)</sup>	
Series X Convertible Preferred <sup>(1)</sup> (6)  (6)  (7)  (6)  (7)  (6)  (7)  (7)			346	D <sup>(4)</sup>	
Series X1 Convertible Preferred(1)  (8)  (8)  (8)  (8)  (8)  (8)  (8)		57	57,860	D <sup>(2)</sup>	
Series X1 Convertible Preferred <sup>(1)</sup> (8)  (8)  (8)  (8)  (8)  (8)  (8)  (		43	12,750	D <sup>(3)</sup>	
Series X1 Convertible Preferred <sup>(1)</sup> (8)  (8)  (8)  (8)  (8)  (8)  (8)  (		7	7,635	D <sup>(4)</sup>	

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	Execution Date, Transaction Derivative Expiration Date Securities Underlying		nderlying	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)						
				Code	v	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares		(Instr. 4)		
Warrants to Purchase Common Stock <sup>(1)</sup>	\$12.96 <sup>(7)</sup>							(9)	07/14/2025	Common Stock, \$0.001 par value	79,500 <sup>(7)</sup>		79,500 <sup>(7)</sup>	D <sup>(2)</sup>	
Warrants to Purchase Common Stock <sup>(1)</sup>	\$12.96 <sup>(7)</sup>							(9)	07/14/2025	Common Stock, \$0.001 par value	64,549 <sup>(7)</sup>		64,549 <sup>(7)</sup>	D <sup>(3)</sup>	
Warrants to Purchase Common Stock <sup>(1)</sup>	\$12.96 <sup>(7)</sup>							(9)	07/14/2025	Common Stock, \$0.001 par value	11,415 <sup>(7)</sup>		11,415 <sup>(7)</sup>	D <sup>(4)</sup>	
Warrants to Purchase Series X1 Convertible Preferred Stock <sup>(1)</sup>	\$8,962.74 <sup>(7)</sup>							(10)	09/14/2025	Series X1 Convertible Preferred Stock, \$0.001 par value	1,453,000 <sup>(7)</sup>		1,453	D <sup>(2)</sup>	
Warrants to Purchase Series X1 Convertible Preferred Stock <sup>(1)</sup>	\$8,962.74 <sup>(7)</sup>							(10)	09/14/2025	Series X1 Convertible Preferred Stock, \$0.001 par value	1,086,000 <sup>(7)</sup>		1,086	D <sup>(3)</sup>	
Warrants to Purchase Series X1 Convertible Preferred Stock <sup>(1)</sup>	\$8,962.74 <sup>(7)</sup>							(10)	09/14/2025	Series X1 Convertible Preferred Stock, \$0.001 par value	189,000 <sup>(7)</sup>		189	D <sup>(4)</sup>	
Pre-funded Warrants to Purchase Common Stock <sup>(1)</sup>	\$0.001							(11)	12/31/2030	Common Stock, \$0.001 par value	254,666		254,666	D <sup>(2)</sup>	
Pre-funded Warrants to Purchase Common Stock <sup>(1)</sup>	\$0.001							(11)	12/31/2030	Common Stock, \$0.001 par value	200,245		200,245	D <sup>(3)</sup>	
Pre-funded Warrants to Purchase Common Stock <sup>(1)</sup>	\$0.001							(11)	12/31/2030	Common Stock, \$0.001 par value	39,938		39,938	D <sup>(4)</sup>	
Warrants to Purchase Common Stock <sup>(1)</sup>	\$3							(12)	(12)	Common Stock, \$0.001 par value	3,084,090		3,084,090	D <sup>(2)</sup>	
Warrants to Purchase Common Stock <sup>(1)</sup>	\$3							(12)	(12)	Common Stock, \$0.001 par value	2,446,209		2,446,209	D <sup>(3)</sup>	
Warrants to Purchase Common Stock <sup>(1)</sup>	\$3							(12)	(12)	Common Stock, \$0.001 par value	252,291		252,291	D <sup>(4)</sup>	

BVF PARTNERS	<u>3 L F/IL</u>	
(Last)	(First)	(Middle)
44 MONTGOMERY	ST.	
40TH FL		
(Street)		
SAN FRANCISCO	CA	94104
(City)	(State)	(Zip)
1 Name and Address of	Danastia a Danas *	
1. Name and Address of BIOTECHNOLO	OGY VALUE FUN	ND L P
		ND L P  (Middle)
BIOTECHNOLO	OGY VALUE FUN (First)	
BIOTECHNOLO (Last)	OGY VALUE FUN (First)	
(Last) 44 MONTGOMERY	OGY VALUE FUN (First)	
(Last) 44 MONTGOMERY 40TH FL	OGY VALUE FUN (First) Y ST.	

Last)	(First)	(Middle)
44 MONTGOMERY	, ,	(2.2)
40TH FL		
(Street)		
SAN FRANCISCO	CA	94104
(City)	(State)	(Zip)
1. Name and Address of F		
BIOTECHNOLO	OGY VALUE FUN	ND II LP
(Last)	(First)	(Middle)
44 MONTGOMERY	ST.	
40TH FL		
(Street) SAN FRANCISCO	CA	94104
DAIN I MAINCISCO	CA .	7117
(City)	(State)	(Zip)
1. Name and Address of F	Reporting Person*	
BVF II GP LLC		
(Last)	(First)	(Middle)
44 MONTGOMERY 40TH FL	ST.	
(Street) SAN FRANCISCO	CA	94104
(City)	(State)	(Zip)
Name and Address of F		OS LP
Name and Address of F	Reporting Person* alue Trading Fund (First)	OS LP (Middle)
1. Name and Address of Biotechnology Va	Reporting Person* alue Trading Fund  (First) AND HOUSE	
1. Name and Address of Biotechnology Value (Last) P.O. BOX 309 UGLA (Street)	Reporting Person* alue Trading Fund  (First) AND HOUSE	(Middle)
1. Name and Address of Biotechnology Vi  Biotechnology Vi  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City)  1. Name and Address of B	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State)  Reporting Person*	(Middle)  KY1-1104
1. Name and Address of Biotechnology Value (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State)  Reporting Person*	(Middle)  KY1-1104
1. Name and Address of Biotechnology Value (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN (City) 1. Name and Address of B BVF Partners OS	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State)  Reporting Person* 3 Ltd.  (First)	(Middle)  KY1-1104
1. Name and Address of Biotechnology Value (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN (City)  1. Name and Address of B BVF Partners OS	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State)  Reporting Person* 3 Ltd.  (First)	(Middle)  KY1-1104  (Zip)
1. Name and Address of Biotechnology Value (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN (City) 1. Name and Address of B BVF Partners OS	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State) Reporting Person* B Ltd.  (First) AND HOUSE	(Middle)  KY1-1104  (Zip)
1. Name and Address of Biotechnology Value  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City) 1. Name and Address of BVF Partners OS  (Last) P.O. BOX 309 UGLA  (Street)	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State) Reporting Person* B Ltd.  (First) AND HOUSE	(Middle)  KY1-1104  (Zip)  (Middle)
1. Name and Address of Biotechnology Vision (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN (City) 1. Name and Address of BOYF Partners OS (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State)  Reporting Person* 3 Ltd.  (First) AND HOUSE	(Middle)  KY1-1104  (Zip)  (Middle)
1. Name and Address of Biotechnology Value  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City)  1. Name and Address of B BVF Partners OS  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City)	Reporting Person*  alue Trading Fund  (First)  AND HOUSE  E9  (State)  Reporting Person*  AND HOUSE  E9  (State)  (First)  AND HOUSE  E9  (State)  Reporting Person*	(Middle)  KY1-1104  (Zip)  (Middle)
1. Name and Address of Biotechnology Value  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City)  1. Name and Address of B BVF Partners OS  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City)  1. Name and Address of B	Reporting Person*  alue Trading Fund  (First)  AND HOUSE  E9  (State)  Reporting Person*  AND HOUSE  E9  (State)  (First)  AND HOUSE  E9  (State)  Reporting Person*	(Middle)  KY1-1104  (Zip)  (Middle)
1. Name and Address of Biotechnology Value  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City) 1. Name and Address of BOX 309 UGLA  (Street) GRAND CAYMAN  (City) 1. Name and Address of GRAND CAYMAN  (City) 1. Name and Address of BOX 309 UGLA  (Street) GRAND CAYMAN	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State)  Reporting Person* S Ltd.  (First) AND HOUSE  E9  (State)  Reporting Person* NGS LLC  (First)	(Middle)  KY1-1104  (Zip)  (Middle)  KY1-1104  (Zip)
1. Name and Address of Biotechnology Value  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City) 1. Name and Address of BVF Partners OS  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City) 1. Name and Address of BVF GP HOLDI  (Last)	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State)  Reporting Person* S Ltd.  (First) AND HOUSE  E9  (State)  Reporting Person* NGS LLC  (First)	(Middle)  KY1-1104  (Zip)  (Middle)  KY1-1104  (Zip)
1. Name and Address of Biotechnology Vision (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN (City) 1. Name and Address of BBVF Partners OS (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN (City) 1. Name and Address of BBVF GP HOLDI (Last) 44 MONTGOMERY	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State)  Reporting Person* B Ltd.  (First) AND HOUSE  E9  (State)  Reporting Person* NGS LLC  (First) ST.	(Middle)  KY1-1104  (Zip)  (Middle)  KY1-1104  (Zip)
1. Name and Address of Biotechnology Value  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City)  1. Name and Address of BVF Partners OS  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City)  1. Name and Address of BVF GP HOLDI  (Last) 44 MONTGOMERY  40TH FL  (Street)	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State)  Reporting Person* B Ltd.  (First) AND HOUSE  E9  (State)  Reporting Person* NGS LLC  (First) ST.	(Middle)  KY1-1104  (Zip)  (Middle)  KY1-1104  (Zip)  (Middle)
1. Name and Address of Biotechnology Value  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City)  1. Name and Address of BBVF Partners OS  (Last) P.O. BOX 309 UGLA  (Street) GRAND CAYMAN  (City)  1. Name and Address of BBVF GP HOLDI  (Last) 44 MONTGOMERY 40TH FL  (Street) SAN FRANCISCO	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State) Reporting Person* B Ltd.  (First) AND HOUSE  E9  (State) Reporting Person* NGS LLC  (First) ST.	(Middle)  KY1-1104  (Zip)  (Middle)  KY1-1104  (Zip)  (Middle)
1. Name and Address of Biotechnology Variation (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN (City) 1. Name and Address of BVF Partners OS (Last) P.O. BOX 309 UGLA (Street) GRAND CAYMAN (City) 1. Name and Address of BVF GP HOLDI (Last) 44 MONTGOMERY 40TH FL (Street) SAN FRANCISCO (City) 1. Name and Address of I	Reporting Person* alue Trading Fund  (First) AND HOUSE  E9  (State) Reporting Person* B Ltd.  (First) AND HOUSE  E9  (State) Reporting Person* NGS LLC  (First) ST.	(Middle)  KY1-1104  (Zip)  (Middle)  KY1-1104  (Zip)  (Middle)

(Street) SAN FRANCISCO	CA	94104
(City)	(State)	(Zip)
1. Name and Address of LAMPERT MAI	. •	
(Last) 44 MONTGOMERY 40TH FL	(First)	(Middle)
(Street) SAN FRANCISCO	CA	94104
(City)	(State)	(Zip)

## Explanation of Responses:

- 1. This Form 4 is filed jointly by Biotechnology Value Fund, L.P. ("BVF"), Biotechnology Value Fund II, L.P. ("BVF2"), Biotechnology Value Trading Fund OS LP ("Trading Fund OS"), BVF Partners OS"), BVF IGP LLC ("BVF GP"), BVF IGP LLC ("BVF GP"),
- 2. Securities owned directly by BVF. As the general partner of BVF, BVF GP may be deemed to beneficially own the securities owned directly by BVF. As the sole member of BVF GP, BVF GPH may be deemed to beneficially own the securities owned directly by BVF. As the investment manager of BVF, Partners may be deemed to beneficially own the securities owned directly by BVF. As the general partner of Partners, BVF Inc. may be deemed to beneficially own the securities owned directly by BVF. As a director and officer of BVF Inc., Mr. Lampert may be deemed to beneficially own the securities owned directly by BVF.
- 3. Securities owned directly by BVF2. As the general partner of BVF2, BVF GP may be deemed to beneficially own the securities owned directly by BVF2. As the sole member of BVF2 GP, BVF GPH may be deemed to beneficially own the securities owned directly by BVF2. As the investment manager of BVF2, Partners may be deemed to beneficially own the securities owned directly by BVF2. As the general partner of Partners, BVF Inc., may be deemed to beneficially own the securities owned directly by BVF2. As a director and officer of BVF Inc., Mr. Lampert may be deemed to beneficially own the securities owned directly by BVF2.
- 4. Securities owned directly by Trading Fund OS. As the general partner of Trading Fund OS, Partners OS may be deemed to beneficially own the securities owned directly by Trading Fund OS. As the investment manager of Trading Fund OS and the sole member of Partners OS, Partners may be deemed to beneficially own the securities owned directly by Trading Fund OS. As the general partner of Partners, BVF Inc. may be deemed to beneficially own the securities owned directly by Trading Fund OS. As a director and officer of BVF Inc., Mr. Lampert may be deemed to beneficially own the securities owned directly by Trading Fund OS.
- 5. The pre-funded warrants are exercisable immediately and shall expire when exercised in full. The pre-funded warrants cannot be exercised by the Reporting Persons if, after giving effect thereto, the Reporting Person would beneficially own, as determined in accordance with Section 13(d) of the Exchange Act, more than 9.99% of the outstanding shares of Common Stock, subject to certain exceptions.
- 6. The Series X Convertible Preferred Stock may not be exercised if, after such exercise, the Reporting Persons would beneficially own, as determined in accordance with Section 13(d), more than 9.99% of the shares of Common Stock outstanding immediately after giving effect to such exercise. Each share of Series X Convertible Preferred Stock is convertible into 55.55 shares of Common Stock. The Series X Convertible Preferred Stock does not have an expiration date and is subject to certain adjustments pursuant to the Series X Exchange Agreement filed as Exhibit 10.1 to Form 8-K filed by the Issuer with the Securities and Exchange Commission on January 7, 2021.
- 7. Reflects a one-for-eighteen reverse stock split of the Issuer's issued and outstanding Common Stock, effective as of October 5, 2020 (the "Stock Split")
- 8. The Series X1 Convertible Preferred Stock may not be exercised if, after such exercise, the Reporting Persons would beneficially own, as determined in accordance with Section 13(d), more than 9.99% of the shares of Common Stock outstanding immediately after giving effect to such exercise. Each share of Series X1 Convertible Preferred Stock is convertible into 55.55 shares of Common Stock. The Series X1 Convertible Preferred Stock does not have an expiration date and is subject to certain adjustments pursuant to the Series X1 Exchange Agreement filed as Exhibit 10.1 to Form 8-K filed by the Issuer with the Securities and Exchange Commission on January 13, 2022.
- 9. Pursuant to a warrant exercise agreement between the Issuer and the Reporting Persons, the Issuer issued to the Reporting Persons warrants to purchase shares of Common Stock at an exercise price of \$0.72 per share, with an exercise period of five and a half years (July 14, 2025). The warrants are subject to adjustment in the event of stock splits, recapitalizations and other similar events affecting the Common Stock. The warrants cannot be exercised by the Reporting Persons if, after giving effect thereto, the Reporting Persons would beneficially own, as determined in accordance with the Exchange Act, more than 9.99% of Common Stock, subject to certain exceptions. In connection with the Stock Split, the exercise price was adjusted to \$12.96.
- 10. Pursuant to a purchase agreement between the Issuer and the Reporting Persons, the Issuer issued to the Reporting Persons warrants to purchase shares of the Series X1 Convertible Preferred Stock at an exercise price of \$497.93 per share, with an exercise period of five years (September 14, 2025). Each warrant to purchase shares of the Series X1 Convertible Preferred Stock is convertible into 1 share of Series X1 Convertible Preferred Stock, which is convertible into 1,000 shares of Common Stock. The warrants are subject to adjustment in the event of stock splits, recapitalizations and other similar events affecting the Common Stock. The warrants cannot be exercised by the Reporting Persons if, after giving effect thereto, the Reporting Persons would beneficially own, as determined in accordance with Section 13(d) of the Exchange Act, more than 9.99% of Common Stock, subject to certain exceptions. In connection with the Stock Split, the exercise price was adjusted to \$8,962.74.
- 11. Pursuant to a warrant exchange agreement between the Issuer and the Reporting Persons, the Issuer issued to the Reporting Persons pre-funded warrants to purchase shares of Common Stock at an exercise equal to \$0.001 per share, with an exercise period of ten years (December 31, 2030). Each pre-funded warrant to purchase shares of the Common Stock is convertible into 1 share of Common Stock. The pre-funded warrants cannot be exercised by the Reporting Persons if, after giving effect thereto, the Reporting Persons would beneficially own, as determined in accordance with Section 13(d) of the Exchange Act, more than 9.99% of Common Stock, pre-funded warrants to purchase shares of the Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock, pre-funded warrants to purchase shares of the Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock, pre-funded warrants to purchase shares of the Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock, pre-funded warrants to purchase shares of the Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock, pre-funded warrants to purchase shares of the Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock, pre-funded warrants to purchase shares of the Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock in the Section 13(d) of the Exchange Act, more than 9.99% of Common Stock in th
- 12. The Common Warrants are exercisable immediately and have a term of exercise equal to five years. The Common Warrants cannot be exercised by the Reporting Persons if, after giving effect thereto, the Reporting Persons would beneficially own, as determined in accordance with Section 13(d) of the Exchange Act, more than 9.99% of the outstanding shares of Common Stock, subject to certain exceptions.

BVF Partners L.P., By: BVF Inc., its general partner, By: /s/ Mark N. Lampert, President	10/31/2024
Biotechnology Value Fund, L.P., By: BVF I GP LLC, its general partner, By: /s/ Mark N. Lampert, Chief Executive Officer	10/31/2024
BVF I GP LLC, By: /s/ Mark N. Lampert, Chief Executive Officer	10/31/2024
Biotechnology Value Fund II, L.P., By; BVF II GP LLC, its general partner, By; /s/ Mark N. Lampert, Chief Executive Officer	10/31/2024
BVF II GP LLC, By: /s/ Mark N. Lampert, Chief Executive Officer	10/31/2024
BVF Partners OS Ltd., By: BVF Partners L.P., its sole member, By: BVF Inc., its general partner, By: /s/ Mark N. Lampert, President	10/31/2024
Biotechnology Value Trading Fund OS LP, By: BVF Partners L.P., its investment manager, BVF Inc., its general partner, By: /s/ Mark N. Lampert, President	10/31/2024
BVF GP Holdings LLC, By: /s/ Mark N. Lampert, Chief Executive Officer	10/31/2024
BVF Inc., By: /s/ Mark N. Lampert, President	10/31/2024
/s/ Mark N. Lampert	10/31/2024
** Signature of Reporting Person	Date

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a). Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.