SEC Form 4	
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## FORM 4

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

OMB APP	ROVAL
OMB Number:	3235-0287
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hours per response	. 0.5

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

## STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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

1. Name and Address of Reporting Person*           BVF PARTNERS L P/IL           (Last)         (First)         (Middle)           44 MONTGOMERY STREET													k all app Direc	tor er (give title	ng Per X	10% C	wner (specify			
40TH FI (Street) SAN FRANC		A 9	94104		4. lf .	Amend	lment,	Date	of Origir	nal File	ed (Month/Da	y/Year)	)	6. Individual or Joint/Group Filing (Check Appli Line) Form filed by One Reporting Person Form filed by More than One Reportir			son			
FRANC.														Х	Perso					
(City)	(St		Zip)																	
1. Title of	Security (Ins	Table I - No r. 3)		2. Transact Date (Month/Day	ion	2A. D Execu if any	. Deemed 3 ecution Date, 1 iny 0		3. Transa Code ( 8)	ction	4. Securities Acquir		red (A)	) or 5. Amo 4 and 5) Securit Benefic		5. Amount of Securities Beneficially Owned Following		wnership n: Direct or Indirect nstr. 4)	t of Indirect	
							-		Code	v	Amount	(A) o (D)	r Prie	ce	- Report Transa	ed ction(s) 3 and 4)	ed ction(s)		(Instr. 4)	
Common	Stock <sup>(1)</sup>			12/20/2	022				Р		116,635	A	\$4	.1086	2,3	32,638		D <sup>(2)</sup>		
Common				12/20/2					Р		87,831	A	_	.1086	36 1,764,220		54,220 D <sup>(2</sup>			
Common	Stock <sup>(1)</sup>			12/20/2					Р		9,597	A		.1086	241,309		D <sup>(4)</sup>			
		Tal	ble II								oosed of, o convertib				Ownee	d				
1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	Execu if any	eemed ution Date, h/Day/Year)	4. Transa Code 8)		of Deri Secu Acqu (A) o Disp of (D	osed )) r. 3, 4	6. Date Expira (Monti	tion D		7. Title Amou Secur Under Deriva Secur 3 and	int of ities rlying ative ity (Ins	of Derivative d s Security S log (Instr. 5) B e (Instr. F R T				10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	Beneficial Ownership (Instr. 4)	
					Code	v	(A)	(D)	Date Exerci	sable	Expiration Date	Title	Amou or Numb of Share	er						
	nd Address of ARTNER	Reporting Person <sup>*</sup>																		
(Last) 44 MON 40TH FI	TGOMER'	(First) Y STREET	(N	1iddle)																
(Street) SAN FRANC	ISCO	CA	94	4104																
(City)		(State)	(Z	ip)																
		Reporting Person <sup>*</sup>		ND L P																
(Last) 44 MON 40TH FI		(First) Y STREET	(N	1iddle)																
(Street) SAN FRANC	ISCO	CA	94	4104																
(City)		(State)	(Z	ip)																

1. Name and Address of Reporting Person\*

BVF I GP LLC	2	
(Last) 44 MONTGOME 40TH FL	(First) RY STREET	(Middle)
(Street) SAN FRANCISCO	СА	94104
(City)	(State)	(Zip)
	of Reporting Person*	FUND II LP
(Last) 44 MONTGOME 40TH FL	(First) RY STREET	(Middle)
(Street) SAN FRANCISCO	СА	94104
(City)	(State)	(Zip)
1. Name and Address <u>BVF II GP LL</u>		
(Last) 44 MONTGOME 40TH FL	(First) RY STREET	(Middle)
(Street) SAN FRANCISCO	СА	94104
(City)	(State)	(Zip)
	. ,	(בוף)
1. Name and Address	. ,	
1. Name and Address	of Reporting Person* Value Trading F	
1. Name and Address Biotechnology (Last)	of Reporting Person* Value Trading F	Fund OS LP
1. Name and Address <u>Biotechnology</u> (Last) P.O. BOX 309 UC (Street) GRAND	of Reporting Person* Value Trading F (First) GLAND HOUSE	Fund OS LP (Middle)
1. Name and Address Biotechnology (Last) P.O. BOX 309 UC (Street) GRAND CAYMAN	of Reporting Person <sup>*</sup> Value Trading F (First) GLAND HOUSE E9 (State) of Reporting Person <sup>*</sup>	Fund OS LP (Middle) KY1-1104
1. Name and Address <u>Biotechnology</u> (Last) P.O. BOX 309 UC (Street) GRAND CAYMAN (City) 1. Name and Address	of Reporting Person* Value Trading F (First) BLAND HOUSE E9 (State) of Reporting Person* OS Ltd. (First)	Fund OS LP (Middle) KY1-1104
1. Name and Address <u>Biotechnology</u> (Last) P.O. BOX 309 UC (Street) GRAND CAYMAN (City) 1. Name and Address <u>BVF Partners</u>	of Reporting Person* Value Trading F (First) BLAND HOUSE E9 (State) of Reporting Person* OS Ltd. (First)	Fund OS LP       (Middle)       KY1-1104       (Zip)
1. Name and Address Biotechnology (Last) P.O. BOX 309 UC (Street) GRAND (City) 1. Name and Address BVF Partners ( (Last) P.O. BOX 309 UC (Street) GRAND	of Reporting Person <sup>*</sup> Value Trading F (First) GLAND HOUSE E9 (State) of Reporting Person <sup>*</sup> OS Ltd. (First) GLAND HOUSE	Fund OS LP (Middle) KY1-1104 (Zip) (Middle)
1. Name and Address <u>Biotechnology</u> (Last) P.O. BOX 309 UC (Street) GRAND CAYMAN (City) 1. Name and Address <u>BVF Partners</u> (Last) P.O. BOX 309 UC (Street) GRAND CAYMAN	of Reporting Person* Value Trading F (First) SLAND HOUSE E9 (State) of Reporting Person* OS Ltd. (First) SLAND HOUSE E9 (State) of Reporting Person*	Fund OS LP (Middle) KY1-1104 (Zip) (Middle) KY1-1104
1. Name and Address Biotechnology (Last) P.O. BOX 309 UC (Street) GRAND CAYMAN (City) 1. Name and Address BVF Partners ( (Last) P.O. BOX 309 UC (Street) GRAND CAYMAN (City) 1. Name and Address	of Reporting Person* Value Trading F (First) GLAND HOUSE E9 (State) of Reporting Person* OS Ltd. (First) GLAND HOUSE E9 (State) of Reporting Person* DINGS LLC (First)	Fund OS LP (Middle) KY1-1104 (Zip) (Middle) KY1-1104

SAN FRANCISCO	CA	94104	
(City)	(State)	(Zip)	
1. Name and Address <u>BVF INC/IL</u>	of Reporting Person <sup>*</sup>		
(Last) 44 MONTGOMEI 40TH FL	(First) RY STREET	(Middle)	
(Street) SAN FRANCISCO	СА	94104	
(City)	(State)	(Zip)	
1. Name and Address <u>LAMPERT M</u>			
(Last) 44 MONTGOMEI 40TH FL (Street) SAN	(First) RY STREET	(Middle)	
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 Ltd. ("Partners OS"), BVF I GP LLC ("BVF GP"), BVF II GP LLC ("BVF2 GP"), BVF GP Holdings LLC ("BVF GPH"), BVF Partners L.P. ("Partners"), BVF Inc. and Mark N. Lampert (collectively, the "Reporting Persons"). Each of the Reporting Persons is a member of a Section 13(d) group that collectively beneficially owns over 10% of the Issuer's outstanding shares. Each of the Reporting Persons disclaims beneficial ownership of the securities reported herein except to the extent of his or its pecuniary interest therein.

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 the own 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 investment manager of BVF, Partners 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 investment manager of BVF, Partners 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 investment manager of BVF, Partners 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, BVF2 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 investment adviser and 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 investment adviser and general partner of Partners, BVF Inc. may be deemed to beneficially own the securities owned directly by Trading Fund OS. As the investment adviser and 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.

BVF Partners L.P., By: BVF Inc., its general partner, By: /s/ Mark N. Lampert, President
Biotechnology Value Fund,         L.P., By: BVF I GP LLC, its         general partner, By: /s/ Mark       12/22/2022         N. Lampert, Chief Executive         Officer
BVF I GP LLC, By: /s/ Mark <u>N. Lampert, Chief Executive</u> <u>12/22/2022</u> <u>Officer</u>
Biotechnology Value Fund II,         L.P., By: BVF II GP LLC, its         general partner, By: /s/ Mark       12/22/2022         N. Lampert, Chief Executive         Officer
BVF II GP LLC, By: /s/ Mark N. Lampert, Chief Executive 12/22/2022 Officer
BVF Partners OS Ltd., By:BVF Partners L.P., its solemember, By: BVF Inc., itsgeneral partner, By: /s/ MarkN. Lampert, President
Biotechnology Value Trading12/22/2022Fund OS LP, By: BVFPartners L.P., its investmentmanager, BVF Inc., its general

partner, By: /s/ Mark N.<br/>Lampert, PresidentJampert, PresidentBVF GP Holdings LLC, By:<br/>/s/ Mark N. Lampert, Chief12/22/2022Executive Officer12/22/2022BVF Inc., By: /s/ Mark N.<br/>Lampert, President12/22/2022/s/ Mark N. Lampert12/22/2022\*\* Signature of Reporting PersonDate

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

 $^{\ast}$  If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* 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.