

INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

OMB APPROVAL	
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Filed 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* <u>BVF PARTNERS L P/IL</u> <hr/> (Last) (First) (Middle) ONE SANSOME STREET 30TH FLOOR <hr/> (Street) SAN FRANCISCO CA 94104 <hr/> (City) (State) (Zip)	2. Date of Event Requiring Statement (Month/Day/Year) 09/08/2016	3. Issuer Name and Ticker or Trading Symbol <u>Xenon Pharmaceuticals Inc. [ XENE ]</u>	
		4. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director <input checked="" type="checkbox"/> 10% Owner Officer (give title below) Other (specify below)	5. If Amendment, Date of Original Filed (Month/Day/Year)  6. Individual or Joint/Group Filing (Check Applicable Line) Form filed by One Reporting Person <input checked="" type="checkbox"/> Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Beneficially Owned

1. Title of Security (Instr. 4)	2. Amount of Securities Beneficially Owned (Instr. 4)	3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	4. Nature of Indirect Beneficial Ownership (Instr. 5)
Common Stock, no par value per share <sup>(1)</sup>	1,352,312	D <sup>(2)</sup>	
Common Stock, no par value per share <sup>(1)</sup>	883,470	D <sup>(3)</sup>	
Common Stock, no par value per share <sup>(1)</sup>	262,664	D <sup>(4)</sup>	

Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)		3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)		4. Conversion or Exercise Price of Derivative Security	5. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares			

1. Name and Address of Reporting Person\*  
BVF PARTNERS L P/IL  


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 (Last) (First) (Middle)  
 ONE SANSOME STREET  
 30TH FLOOR  


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 (Street)  
 SAN FRANCISCO CA 94104  


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 (City) (State) (Zip)

1. Name and Address of Reporting Person\*  
BIOTECHNOLOGY VALUE FUND L P  


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 (Last) (First) (Middle)  
 ONE SANSOME STREET  
 30TH FLOOR  


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 (Street)  
 SAN FRANCISCO CA 94104  


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 (City) (State) (Zip)

1. Name and Address of Reporting Person\*  
BIOTECHNOLOGY VALUE FUND II LP  


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 (Last) (First) (Middle)  
 ONE SANSOME STREET

30TH FLOOR

(Street)

SAN FRANCISCO CA 94104

(City)

(State)

(Zip)

1. Name and Address of Reporting Person\*

Biotechnology Value Trading Fund OS LP

(Last)

(First)

(Middle)

P.O. BOX 309 UGLAND HOUSE

(Street)

GRAND  
CAYMAN

E9

KY1-1104

(City)

(State)

(Zip)

1. Name and Address of Reporting Person\*

BVF Partners OS Ltd.

(Last)

(First)

(Middle)

P.O. BOX 309 UGLAND HOUSE

(Street)

GRAND  
CAYMAN

E9

KY1-1104

(City)

(State)

(Zip)

1. Name and Address of Reporting Person\*

BVF INC/IL

(Last)

(First)

(Middle)

ONE SANSOME STREET  
30TH FLOOR

(Street)

SAN FRANCISCO CA

94104

(City)

(State)

(Zip)

1. Name and Address of Reporting Person\*

LAMPERT MARK N

(Last)

(First)

(Middle)

ONE SANSOME STREET  
30TH FLOOR

(Street)

SAN FRANCISCO CA

94104

(City)

(State)

(Zip)

**Explanation of Responses:**

1. This Form 3 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 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 owns more than 10% of the Issuer's outstanding shares of Common Stock. Each of the Reporting Persons disclaims beneficial ownership of the shares of Common Stock reported herein except to the extent of his or its pecuniary interest therein.
2. Shares of Common Stock owned directly by BVF. As the general partner of BVF, Partners may be deemed to beneficially own the shares of Common Stock owned directly by BVF. As the investment adviser and general partner of Partners, BVF Inc. may be deemed to beneficially own the shares of Common Stock owned directly by BVF. As a director and officer of BVF Inc., Mr. Lampert may be deemed to beneficially own the shares of Common Stock owned directly by BVF.
3. Shares of Common Stock owned directly by BVF2. As the general partner of BVF2, Partners may be deemed to beneficially own the shares of Common Stock owned directly by BVF2. As the investment adviser and general partner of Partners, BVF Inc. may be deemed to beneficially own the shares of Common Stock owned directly by BVF2. As a director and officer of BVF Inc., Mr. Lampert may be deemed to beneficially own the shares of Common Stock owned directly by BVF2.
4. Shares of Common Stock owned directly by Trading Fund OS. As the general partner of Trading Fund OS, Partners OS may be deemed to beneficially own the shares of Common Stock 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 shares of Common Stock owned directly by Trading Fund OS. As the investment adviser and general partner of Partners, BVF Inc. may be deemed to beneficially own the shares of Common Stock owned directly by Trading Fund OS. As a director and officer of BVF Inc., Mr. Lampert may be deemed to beneficially own the shares of Common Stock owned directly by Trading Fund OS.

BVF Partners L.P., By: BVF  
Inc., its general partner, By: /s/ 09/12/2016  
Mark N. Lampert, President  
Biotechnology Value Fund, 09/12/2016

L.P., By: BVF Partners L.P., its general partner, By: BVF Inc., its general partner, By: /s/ Mark N. Lampert, President  
Biotechnology Value Fund II, L.P., By: BVF Partners L.P., its general partner, By: BVF Inc., its general partner, By: /s/ Mark N. Lampert, President 09/12/2016  
BVF Partners OS Ltd., By: BVF Partners L.P., its sole member, By: BVF Inc., its general partner, By: /s/ Mark N. Lampert, President 09/12/2016  
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 09/12/2016  
BVF Inc., By: /s/ Mark N. Lampert, President 09/12/2016  
/s/ Mark N. Lampert 09/12/2016  
 \*\* Signature of Reporting Person Date

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

\* If the form is filed by more than one reporting person, see Instruction 5 (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.**