SYNAPTIC PHARMACEUTICAL CORP Form SC 13G/A December 17, 2002

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SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

SCHEDULE 13G

(Rule 13d-102)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULES 13d-1(b) (c) AND (d) AND AMENDMENTS THERETO FILED PURSUANT TO 13d-2(b) (Amendment No. 5)¹

Synaptic Pharmaceutical Corp.	
(Name of Issuer)	
Common Stock	
(Title of Class of Securities)	
87156R 10 9	
(CUSIP Number)	
December 13, 2002	
(Date of Event Which Requires Filing of this Statement)	

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- o Rule 13d-1(b)
- ý Rule 13d-1(c)
- o Rule 13d-1(d)

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 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*).

¹ The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

CUSIP No. 87156R 10 9	SIP No. 87156R 10 9	
1 NAME OF REPORTI Biotechnology Value I.R.S. IDENTIFICATI		
2 CHECK THE APPRO	PRIATE BOX IF A MEMBER OF A GROUP*	(a) ý (b) o
3 SEC USE ONLY		
4 CITIZENSHIP OR PL Delaware	ACE OF ORGANIZATION	
NUMBER OF SHARES	5 SOLE VOTING POWER 0	
BENEFICIALLY OWNED BY	6 SHARED VOTING POWER 308,149	
EACH REPORTING PERSON	7 SOLE DISPOSITIVE POWER 0	
WITH:	8 SHARED DISPOSITIVE POWER 308,149	
9 AGGREGATE AMO 308,149	OUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	
10 CHECK IF THE AG	GREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES*	o
11 PERCENT OF CLAS 2.8%	SS REPRESENTED BY AMOUNT IN ROW (11)	
12 TYPE OF REPORTI	NG PERSON*	
	*SEE INSTRUCTIONS BEFORE FILLING OUT!	
CUSIP No. 87156R 10 9	13G	Page 3 of 9 Pages

1 NAME OF REPOR Biotecyhnology Va I.R.S. IDENTIFICA		
2 CHECK THE APP	PROPRIATE BOX IF A MEMBER OF A GROUP*	(a) y (b) o
3 SEC USE ONLY		
4 CITIZENSHIP OR Delaware	R PLACE OF ORGANIZATION	
NUMBER OF SHARES	7 SOLE VOTING POWER 0	
BENEFICIALLY OWNED BY	6 SHARED VOTING POWER 64,051	
EACH REPORTING PERSON	7 SOLE DISPOSITIVE POWER 0	
WITH:	8 SHARED DISPOSITIVE POWER 64,051	
9 AGGREGATE A 64,051	MOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	
10 CHECK IF THE A	AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES*	(
11 PERCENT OF CI	LASS REPRESENTED BY AMOUNT IN ROW (11)	
.6%		
12 TYPE OF REPOR	RTING PERSON*	
PN		
	*SEE INSTRUCTIONS BEFORE FILLING OUT!	
CUSIP No. 87156R 10 9	- 13G	Page 4 of 9 Pages
1 NAME OF REPOR	DITING DED SON.	

BVF Investments, L.L.C.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY):

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*			(a) <u>y</u> (b) <u>c</u>
3 SEC USE	ONLY		
4 CITIZENS	SHIP OR PLACE O	OF ORGANIZATION	
Delaware			
NUMBER O	5 F	SOLE VOTING POWER 0	
BENEFICIALI OWNED BY	LY 6	SHARED VOTING POWER 106,833	
EACH REPORTING PERSON	7	SOLE DISPOSITIVE POWER 0	
WITH:	8	SHARED DISPOSITIVE POWER 106,833	
9 AGGRE	GATE AMOUNT I	BENEFICIALLY OWNED BY EACH REPORTING PERSON	
106,833			
10 CHECK	IF THE AGGREG	ATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES*	(
11 PERCEN	T OF CLASS REF	PRESENTED BY AMOUNT IN ROW (11)	
1.0%			
12 TYPE O	F REPORTING PE	RSON*	
00			
		*SEE INSTRUCTIONS BEFORE FILLING OUT!	
CUSIP No. 87156	6R 10 9	13G	Page 5 of 9 Pages
BVF Part		RSON: OS. OF ABOVE PERSONS (ENTITIES ONLY):	
		TE DOV IE A MEMDED OF A CDOUD*	(a)

3 SEC USE ONLY			
4 CITIZENSHIP OF	PLACE OF ORGANIZATION		
Delaware			
NUMBER OF SHARES	5 SOLE VOTING POW 0	/ER	
BENEFICIALLY OWNED BY	6 SHARED VOTING P 515,683	OWER	
EACH REPORTING PERSON	7 SOLE DISPOSITIVE 0	POWER	
WITH:	8 SHARED DISPOSITI 515,683	IVE POWER	
11 PERCENT OF C	ASS REPRESENTED BY AMOU	NT IN ROW (11)	
12 TYPE OF REPO	TING PERSON*		
	*SEE INSTRUCTI	IONS BEFORE FILLING OUT	!
CUSIP No. 87156R 10 9		13G	Page 6 of 9 Pages
1 NAME OF REPO BVF Inc. S.S. OR I.R.S. IDI	TING PERSON:	PERSONS (ENTITIES ONLY):	
2 CHECK THE API	ROPRIATE BOX IF A MEMBER (OF A GROUP*	(a) ý

3 SEC USE ONLY

4 CITIZENSHIP OR P	LACE OF ORGANIZATION	
Delaware		
NUMBER OF SHARES	5 SOLE VOTING POWER 0	
BENEFICIALLY OWNED BY	6 SHARED VOTING POWER 515,683	
EACH REPORTING PERSON	7 SOLE DISPOSITIVE POWER 0	
WITH:	8 SHARED DISPOSITIVE POWER 515,683	
9 AGGREGATE AM	OUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	
515,683		
10 CHECK IF THE AG	GGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES*	0
11 PERCENT OF CLA	ASS REPRESENTED BY AMOUNT IN ROW (11)	
4.7%		
12 TYPE OF REPORT	'ING PERSON*	
IA, CO		
	*SEE INSTRUCTIONS BEFORE FILLING OUT!	
CUSIP No. 87156R 10 9	13G	Page 7 of 9 Pages
ITEM 1(a). NAME OF ISSUI	ER:	

Synaptic Pharmaceutical Corp. ("Synaptic")

ITEM 1(b). ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES:

215 College Road Paramus, NJ 07652

ITEM 2(a). NAME OF PERSON FILING:

This Amendment to Schedule 13G is being filed on behalf of the following persons*:

- (i) Biotechnology Value Fund, L.P. ("BVF") (ii)
- Biotechnology Value Fund II, L.P. ("BVF2")
- (iii) BVF Investments, L.L.C. ("Investments")
- (iv) BVF Partners L.P. ("Partners")
- (v)
 BVF Inc. ("BVF Inc.")

ITEM 2(b). ADDRESS OF PRINCIPAL BUSINESS OFFICE:

The principal business office of the persons comprising the group filing this Amendment to Schedule 13G is located at 227 West Monroe Street, Suite 4800, Chicago, Illinois, 60606.

ITEM 2(c). CITIZENSHIP:

BVF: BVF2: Investments:

Partners:
BVF Inc.:

а Г а Г

- a Delaware limited partnership
- a Delaware limited partnership
- a Delaware limited liability company
- a Delaware limited partnership
- a Delaware corporation

ITEM 2(d). TITLE OF CLASS OF SECURITIES:

Common Stock.

ITEM 2(e). CUSIP Number:

87156R 109

CUSIP No. 87156R 10 9

13G

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ITEM 3. IF THIS STATEMENT IS FILED PURSUANT TO RULE 13d-1(b), or 13d-2(b) or (c) CHECK WHETHER THE PERSON FILING IS: One of the following

Not applicable as this Amendment to Schedule 13G is filed pursuant to Rule 13d-1(c).

ITEM 4. OWNERSHIP:

The information in items 1 and 5 through 11 on the cover pages (pp. 2 - 6) on this Amendment to Schedule 13G is hereby incorporated by reference.

ITEM 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS:

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities check the following. \circ

ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON:

BVF shares voting and dispositive power over the shares of the common stock it beneficially owns with Partners. BVF2 also shares voting and dispositive power over the shares of the common stock it beneficially owns with Partners. Investments also shares voting and dispositive power over the shares of the common stock it beneficially owns with Partners. Pursuant to the operating agreement of Investments, Partners is

^{*} Attached as Exhibit 1 is a copy of an agreement among the persons filing (as specified hereinabove) that this Amendment to Schedule 13G is being filed on behalf of each of them.

authorized, among other things, to invest the funds of Ziff Asset Management, L.P., the majority member of Investments, in shares of the common stock Investments beneficially owns and to vote and exercise dispositive power over those shares of common stock. Partners and BVF Inc. share voting and dispositive power over the shares of the common stock they beneficially own with, in addition to BVF, BVF2 and Investments, a managed account on whose behalf Partners, as investment manager, purchased such shares. The managed account does not own more than 5% of the common stock of Synaptic.

ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY:

Not applicable.

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF A GROUP:

Not applicable.

ITEM 9. NOTICE OF DISSOLUTION OF GROUP:

Not applicable.

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ITEM 10. CERTIFICATION

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

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.

Dated: December 17, 2002

BIOTECHNOLOGY VALUE FUND, L.P.

By: BVF Partners L.P., its general partner

By: BVF Inc., its general partner

By: /s/ MARK N. LAMPERT

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

Mark N. Lampert President

BVF INVESTMENTS, L.L.C.

By: BVF Partners L.P., its manager

By: BVF Inc., its general partner

By: /s/ MARK N. LAMPERT

Mark N. Lampert President

BVF PARTNERS L.P.

By: BVF Partners L.P., its general partner

By: /s/ MARK N. LAMPERT

Mark N. Lampert President

BVF INC.

By: /s/ MARK N. LAMPERT

Mark N. Lampert President

QuickLinks

SCHEDULE 13D