
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No.)*

Pacira Pharmaceuticals, Inc.

(Name of Issuer)

Common Stock

(Title of Class of Securities)

695127 10 0

(CUSIP Number)

Luke B. Evin
MPM Asset Management
The John Hancock Tower
200 Clarendon Street, 54th Floor
Boston, MA 02116
Telephone: (617) 425-9200

(Name, Address and Telephone Number of Person Authorized to
Receive Notices and Communications)

February 8, 2011

(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.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7 for other parties to whom copies are to be sent.

* 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.

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).

CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS MPM BioVentures IV Q-P, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) WC	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 2,725,472(2)
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 2,725,472(2)
	10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,725,472(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 15.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) PN	

(1) MPM BioVentures IV-QP, L.P. (“BV IV QP”), MPM BioVentures IV GmbH & Co. Beteiligungs KG (“BV IV KG”), MPM Asset Management Investors BV4 LLC (“AM LLC”), MPM BioVentures IV GP LLC (“BV IV GP”), MPM BioVentures IV LLC (“BV IV LLC”) (collectively, the “MPM Entities”) and Ansbert Gadicke, Luke Evnin, Steven St. Peter, William Greene, James Paul Scopa, Ashley Dombkowski, Vaughn Kailian and John Vander Vort (collectively, the “Listed Persons” and together with the MPM Entities, the “Filing Persons”). The Listed Persons are members of BV IV LLC and AM LLC. The MPM Entities and the Listed Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.

(2) Includes 74,072 shares of Common Stock underlying warrants which are exercisable within 60 days of the date of this filing.

(3) This percentage is calculated based upon 17,232,876 shares of the Issuer's Common Stock outstanding as of February 2, 2011, as adjusted pursuant to Rule 13d-3(d)(1) promulgated under the Securities Exchange Act, as set forth in the Issuer's final prospectus dated February 2, 2011, filed with the Securities and Exchange Commission on February 3, 2011.

CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS MPM BioVentures IV GmbH & Co. Beteiligungs KG	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) WC	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Germany	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 104,999(2)
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 104,999(2)
	10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 104,999(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0.6%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) PN	

(1) This Schedule is filed by the MPM Entities and the Listed Persons. The MPM Entities and the Listed Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.

(2) Includes 2,852 shares of Common Stock underlying warrants which are exercisable within 60 days of the date of this filing.

(3) This percentage is calculated based upon 17,232,876 shares of the Issuer’s Common Stock outstanding as of February 2, 2011, as adjusted pursuant to Rule 13d-3(d)(1) promulgated under the Securities Exchange Act, as set forth in the Issuer’s final prospectus dated February 2, 2011, filed with the Securities and Exchange Commission on February 3, 2011.

CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS MPM Asset Management Investors BV4 LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) WC	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 77,500(2)
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 77,500(2)
	10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 77,500(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0.5%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) OO	

(1) This Schedule is filed by the MPM Entities and the Listed Persons. The MPM Entities and the Listed Persons expressly disclaim status as a "group" for purposes of this Schedule 13D.

(2) Includes 2,106 shares of Common Stock underlying warrants which are exercisable within 60 days of the date of this filing.

(3) This percentage is calculated based upon 17,232,876 shares of the Issuer's Common Stock outstanding as of February 2, 2011, as adjusted pursuant to Rule 13d-3(d)(1) promulgated under the Securities Exchange Act, as set forth in the Issuer's final prospectus dated February 2, 2011, filed with the Securities and Exchange Commission on February 3, 2011.

CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS MPM BioVentures IV GP LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) WC	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,830,471(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,830,471(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,830,471(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.4%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) OO	

(1) This Schedule is filed by the MPM Entities and the Listed Persons. The MPM Entities and the Listed Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.

(2) Includes 2,651,400 shares of Common Stock held by BV IV QP and 102,147 shares of Common Stock held by BV IV KG. Also includes (i) 74,072 shares of Common Stock underlying warrants held by BV IV QP, which are exercisable within 60 days of the date of this filing and (ii) 2,852 shares of Common Stock underlying warrants held by BV IV KG, which are exercisable within 60 days of the date of this filing. BV IV GP and BV IV LLC are the direct and indirect general partners of BV IV QP and BV IV KG.

(3) This percentage is calculated based upon 17,232,876 shares of the Issuer’s Common Stock outstanding as of February 2, 2011, as

adjusted pursuant to Rule 13d-3(d)(1) promulgated under the Securities Exchange Act, as set forth in the Issuer's final prospectus dated February 2, 2011, filed with the Securities and Exchange Commission on February 3, 2011.

CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS MPM BioVentures IV LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) WC	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,907,971(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,907,971(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,907,971(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) OO	

(1) This Schedule is filed by the MPM Entities and the Listed Persons. The MPM Entities and the Listed Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.

(2) Includes 2,651,400 shares of Common Stock held by BV IV QP, 102,147 shares of Common Stock held by BV IV KG and 75,394 shares of Common Stock held by AM LLC. Also includes (i) 74,072 shares of Common Stock underlying warrants held by BV IV QP, which are exercisable within 60 days of the date of this filing, (ii) 2,852 shares of Common Stock underlying warrants held by BV IV KG, which are exercisable within 60 days of the date of this filing and (iii) 2,106 shares of Common Stock underlying warrants held by AM LLC, which are exercisable within 60 days of the date of this filing. BV IV GP and BV IV LLC are the direct and indirect general partners of BV IV

QP and BV IV KG and BV IV LLC is the manager of AM LLC.

(3) This percentage is calculated based upon 17,232,876 shares of the Issuer's Common Stock outstanding as of February 2, 2011, as adjusted pursuant to Rule 13d-3(d)(1) promulgated under the Securities Exchange Act, as set forth in the Issuer's final prospectus dated February 2, 2011, filed with the Securities and Exchange Commission on February 3, 2011.

CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS Ansbert Gadicke	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,907,971(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,907,971(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,907,971(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

(1) This Schedule is filed by the MPM Entities and the Listed Persons. The MPM Entities and the Listed Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.

(2) Includes 2,651,400 shares of Common Stock held by BV IV QP, 102,147 shares of Common Stock held by BV IV KG and 75,394 shares of Common Stock held by AM LLC. Also includes (i) 74,072 shares of Common Stock underlying warrants held by BV IV QP, which are exercisable within 60 days of the date of this filing, (ii) 2,852 shares of Common Stock underlying warrants held by BV IV KG, which are exercisable within 60 days of the date of this filing and (iii) 2,106 shares of Common Stock underlying warrants held by AM LLC, which are exercisable within 60 days of the date of this filing. BV IV GP and BV IV LLC are the direct and indirect general partners of BV IV

QP and BV IV KG and BV IV LLC is the manager of AM LLC. The Reporting Person is a member of BV IV LLC.

(3) This percentage is calculated based upon 17,232,876 shares of the Issuer's Common Stock outstanding as of February 2, 2011, as adjusted pursuant to Rule 13d-3(d)(1) promulgated under the Securities Exchange Act, as set forth in the Issuer's final prospectus dated February 2, 2011, filed with the Securities and Exchange Commission on February 3, 2011.

CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS Luke Evnin	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,907,971(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,907,971(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,907,971(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

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(2) Includes 2,651,400 shares of Common Stock held by BV IV QP, 102,147 shares of Common Stock held by BV IV KG and 75,394 shares of Common Stock held by AM LLC. Also includes (i) 74,072 shares of Common Stock underlying warrants held by BV IV QP, which are exercisable within 60 days of the date of this filing, (ii) 2,852 shares of Common Stock underlying warrants held by BV IV KG, which are exercisable within 60 days of the date of this filing and (iii) 2,106 shares of Common Stock underlying warrants held by AM LLC, which are exercisable within 60 days of the date of this filing. BV IV GP and BV IV LLC are the direct and indirect general partners of BV IV

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CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS Steven St. Peter	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,907,971(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,907,971(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,907,971(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

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CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS William Greene	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,907,971(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,907,971(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,907,971(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

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CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS James Paul Scopa	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,907,971(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,907,971(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,907,971(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

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CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS Ashley Dombkowski	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,907,971(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,907,971(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,907,971(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

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CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS Vaughn M. Kailian	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,907,971(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,907,971(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,907,971(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

(1) This Schedule is filed by the MPM Entities and the Listed Persons. The MPM Entities and the Listed Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.

(2) Includes 2,651,400 shares of Common Stock held by BV IV QP, 102,147 shares of Common Stock held by BV IV KG and 75,394 shares of Common Stock held by AM LLC. Also includes (i) 74,072 shares of Common Stock underlying warrants held by BV IV QP, which are exercisable within 60 days of the date of this filing, (ii) 2,852 shares of Common Stock underlying warrants held by BV IV KG, which are exercisable within 60 days of the date of this filing and (iii) 2,106 shares of Common Stock underlying warrants held by AM LLC, which are exercisable within 60 days of the date of this filing. BV IV GP and BV IV LLC are the direct and indirect general partners of BV IV

QP and BV IV KG and BV IV LLC is the manager of AM LLC. The Reporting Person is a member of BV IV LLC.

(3) This percentage is calculated based upon 17,232,876 shares of the Issuer's Common Stock outstanding as of February 2, 2011, as adjusted pursuant to Rule 13d-3(d)(1) promulgated under the Securities Exchange Act, as set forth in the Issuer's final prospectus dated February 2, 2011, filed with the Securities and Exchange Commission on February 3, 2011.

CUSIP No. 695127 10 0

1	NAMES OF REPORTING PERSONS John Vander Vort	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,907,971(2)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,907,971(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,907,971(2)	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.8%(3)	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

(1) This Schedule is filed by the MPM Entities and the Listed Persons. The MPM Entities and the Listed Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.

(2) Includes 2,651,400 shares of Common Stock held by BV IV QP, 102,147 shares of Common Stock held by BV IV KG and 75,394 shares of Common Stock held by AM LLC. Also includes (i) 74,072 shares of Common Stock underlying warrants held by BV IV QP, which are exercisable within 60 days of the date of this filing, (ii) 2,852 shares of Common Stock underlying warrants held by BV IV KG, which are exercisable within 60 days of the date of this filing and (iii) 2,106 shares of Common Stock underlying warrants held by AM LLC, which are exercisable within 60 days of the date of this filing. BV IV GP and BV IV LLC are the direct and indirect general partners of BV IV

QP and BV IV KG and BV IV LLC is the manager of AM LLC. The Reporting Person is a member of BV IV LLC.

(3) This percentage is calculated based upon 17,232,876 shares of the Issuer's Common Stock outstanding as of February 2, 2011, as adjusted pursuant to Rule 13d-3(d)(1) promulgated under the Securities Exchange Act, as set forth in the Issuer's final prospectus dated February 2, 2011, filed with the Securities and Exchange Commission on February 3, 2011.

Item 1. Security and Issuer.

This Schedule 13D (this "Schedule 13D") relates to the common stock, par value \$0.001 per share (the "Common Stock"), of Pacira Pharmaceuticals, Inc. (the "Issuer"). The Issuer's principal executive office is located at 5 Sylvan Way, Suite, 125, Parsippany, NJ 07054.

Item 2. Identity and Background

(a) The entities and persons filing this statement are MPM BioVentures IV-QP, L.P. ("BV IV QP"), MPM BioVentures IV GmbH & Co. Beteiligungs KG ("BV IV KG"), MPM Asset Management Investors BV4 LLC ("AM LLC"), MPM BioVentures IV GP LLC ("BV IV GP"), MPM BioVentures IV LLC ("BV IV LLC") (collectively, the "MPM Entities") and Ansbert Gadicke, Luke Evnin, Steven St. Peter, William Greene, James Paul Scopa, Ashley Dombkowski, Vaughn Kailian and John Vander Vort (collectively, the "Listed Persons" and together with the MPM Entities, the "Filing Persons").

(b) The address of the principal place of business for each of the MPM Entities and Ansbert Gadicke, Luke Evnin, Steven St. Peter, Vaughn Kailian and John Vander Vort is The John Hancock Tower, 200 Clarendon Street, 54th Floor, Boston, MA 02116 and the address of the principal place of business for William Greene, James Paul Scopa and Ashley Dombkowski is 601 Gateway Blvd., Suite 350, S. San Francisco, CA 94080.

(c) The principal business of each of the Filing Persons is the venture capital investment business.

(d) During the last five years, none of the Filing Persons has been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) During the last five years, none of the Filing Persons has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree, or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) Each of the Listed Persons is a United States citizen and each of the MPM Entities is a Delaware limited partnership or limited liability company, except BV IV KG, which was organized in Germany.

In accordance with the provisions of General Instruction C to Schedule 13D, information concerning the managers and each other person controlling the general partners of the MPM Entities required by Item 2 of Schedule 13D is listed on Schedule 1 hereto and is incorporated by reference herein.

Item 3. Source and Amount of Funds or Other Consideration

On February 2, 2011, the Registration Statement on Form S-1 filed with the Securities and Exchange Commission by the Issuer (File No. 333-170245) in connection with its initial public offering of 6,000,000 shares of Common Stock was declared effective. The closing of the offering took place on February 8, 2011, and at such closing the MPM Entities purchased an aggregate of 267,857 shares of Common Stock at the initial public offering price of \$7.00 per share. The source of funds for such purchase was the working capital of the MPM Entities and capital contributions made to the MPM Entities by its partners.

Item 4. Purpose of Transaction

The MPM Entities purchased the shares of Common Stock of the Issuer in the initial public offering for investment purposes.

Luke B. Evnin is a member of the Board of Directors of the Issuer and is also a member of BV IV LLC.

Subject to applicable legal requirements, one or more of the Filing Persons may purchase additional securities of the Issuer from time to time in open market or private transactions, depending on their evaluation of the Issuer's business, prospects and financial condition, the market for the Issuer's securities, other developments concerning the Issuer, the reaction of the Issuer to the Filing Persons' ownership of the Issuer's securities, other opportunities available to the Filing Persons, and general economic, money market and stock market conditions. In addition, depending upon the factors referred to above, the Filing Persons may dispose of all or a portion of their securities of the Issuer at any time. Each of the Filing Persons reserves the right to increase or decrease its holdings on such terms and at such times as each may decide.

Other than as described above in this Item 4, none of the Filing Persons have any plan or proposal relating to or that 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 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 terms of directors or to fill any existing vacancies on the board; (e) any material change in the present capitalization or dividend policy of the Issuer; (f) any other material change in the Issuer's business or corporate structure; (g) any changes in the Issuer's charter, by-laws or instruments corresponding thereto or other actions which may impede the acquisition of control of the Issuer by any person; (h) causing a class of securities of the Issuer to be 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 Exchange Act; or (j) any action similar to those enumerated above.

Item 5. Interest in Securities of the Issuer

(a) — (b) The following information with respect to the ownership of the Common Stock of the Issuer by the Filing Persons is provided as of February 8, 2011:

Reporting Person	Shares Held Directly	Shares Issuable Upon Exercise of Warrants to Purchase			Sole Dispositive Power	Shared Dispositive Power	Beneficial Ownership	Percentage of Class (1)
		Common Stock Held Directly	Sole Voting Power	Shared Voting Power				
BV IV QP	2,651,400	74,072	2,725,472	0	2,725,472	0	2,725,472	15.8%
BV IV KG	102,147	2,852	104,999	0	104,999	0	104,999	0.6%
AM LLC	75,394	2,106	77,500	0	77,500	0	77,500	0.5%
BV IV GP(2)	0	0	0	2,830,471	0	2,830,471	2,830,471	16.4%
BV IV LLC(3)	0	0	0	2,907,971	0	2,907,971	2,907,971	16.8%
Ansbert Gadicke(4)	0	0	0	2,907,971	0	2,907,971	2,907,971	16.8%
Luke Evnin(4)	0	0	0	2,907,971	0	2,907,971	2,907,971	16.8%
Steven St. Peter(4)	0	0	0	2,907,971	0	2,907,971	2,907,971	16.8%
William Greene(4)	0	0	0	2,907,971	0	2,907,971	2,907,971	16.8%
James Paul Scopa(4)	0	0	0	2,907,971	0	2,907,971	2,907,971	16.8%
Ashley Dombkowski(4)	0	0	0	2,907,971	0	2,907,971	2,907,971	16.8%
Vaughn Kailian(4)	0	0	0	2,907,971	0	2,907,971	2,907,971	16.8%
John Vander Vort(4)	0	0	0	2,907,971	0	2,907,971	2,907,971	16.8%

- (1) This percentage is calculated based upon 17,232,876 shares of the Issuer's Common Stock outstanding as of February 2, 2011, as adjusted pursuant to Rule 13d-3(d)(1) promulgated under the Securities Exchange Act, as set forth in the Issuer's final prospectus dated February 2, 2011, filed with the Securities and Exchange Commission on February 3, 2011.
- (2) Includes securities held by BV IV QP and BV IV KG. BV IV GP and BV IV LLC are the direct and indirect general partners of BV IV QP and BV IV KG.
- (3) Includes securities held by BV IV QP, BV IV KG and AM LLC. BV IV GP and BV IV LLC are the direct and indirect general partners of BV IV QP and BV IV KG and BV IV LLC is the manager of AM LLC.
- (4) Includes securities held by BV IV QP, BV IV KG and AM LLC. The Reporting Person is a member of BV IV LLC.

(c) The information provided in Item 3 is hereby incorporated by reference. In addition, on February 8, 2011, the MPM Entities acquired an aggregate of 1,487,680 shares of Common Stock of the Issuer upon the automatic conversion of preferred stock of the Issuer and 980,424 shares of Common Stock of the Issuer upon the automatic conversion of convertible promissory notes, in each case in connection with the closing of the Issuer's initial public offering.

Each Filing Person disclaims membership in a “group.” Each Filing Person also disclaims beneficial ownership of any shares of the Issuer, except for the shares set forth in the table above next to the respective Filing Person’s name in subsection (b) of this Item 5.

(d) Inapplicable.

(e) Inapplicable.

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

Investor Rights Agreement

The MPM Entities and other stockholders of the Issuer have entered into an Investors’ Rights Agreement dated March 23, 2007 (the “Investor Rights Agreement”) with the Issuer. Subject to the terms of the Investor Rights Agreement, holders of shares having registration rights (“Registrable Securities”) can demand that the Issuer file a registration statement or request that their shares be covered by a registration statement that the Issuer is otherwise filing.

Demand Registration Rights

If the Issuer shall receive a written request from the Holders (as defined in the Investor Rights Agreement) of at least 30% of the Registrable Securities then outstanding (the “Initiating Holder”) that the Issuer file a Form S-1 registration statement under the Securities Act of 1933 (the “Securities Act”) with respect to at least 20% of the Registrable Securities then outstanding (or a lesser percent if the anticipated aggregate offering price, net of Selling Expenses, would exceed \$10,000,000), then the Company shall (i) within ten (10) days after the date such request is given, give notice thereof (the “Demand Notice”) to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within sixty (60) days after the date such request is given by the Initiating Holders, file a Form S-1 registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders.

If at any time when it is eligible to use a Form S-3 registration statement, the Company receives a request from Holders of at least twenty percent (20%) of the Registrable Securities then outstanding that the Company file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders having an anticipated aggregate offering price, net of Selling Expenses, of at least \$1,000,000, then the Company shall (i) within ten (10) days after the date such request is given, give a Demand Notice to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within forty-five (45) days after the date such request is given by the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Securities requested to be included in such registration by any other Holders.

The Issuer shall not be obligated to effect, or to take any action to effect, any demand registration after the Issuer has effected three Form S-1 demand registrations.

The Issuer shall not be obligated to effect, or to take any action to effect, any Form S-3 demand registration if the Company has effected two Form S-3 demand registrations within the twelve months period immediately preceding the date of such request.

Piggyback Registration Rights

If the Issuer proposes to register any of its stock in connection with the public offering of such securities by the Issuer or on behalf of selling stockholders, the Issuer shall, at such time, promptly give each Holder written notice of such registration. Upon the written request of each Holder, the Issuer shall, subject to the certain limitations, use its reasonable best efforts to cause to be registered all of the Registrable Securities that each such Holder has requested to be registered.

Expenses of Registration

Subject to certain limitations, the Issuer will pay all registration expenses, other than underwriting discounts and commissions, related to any registration effected pursuant to the Investor Rights Agreement.

Indemnification

The Investor Rights Agreement contains customary cross-indemnification provisions, pursuant to which the Issuer is obligated to indemnify the selling stockholders in the event of material misstatements or omissions in the registration statement attributable to the Issuer, and the selling stockholders are obligated to indemnify the Issuer for material misstatements or omissions attributable to them.

Termination

No Holder shall be entitled to exercise any registration rights after the earlier of:

- the closing of a Deemed Liquidation Event (as such term is defined in the Company's Certificate of Incorporation);
- when all of such Holder's Registrable Securities could be sold without restriction under SEC Rule 144 during any 90-day period and such Holder owns less than 1% of the then outstanding capital stock of the Company; and
- February 8, 2016.

Lock-up Letter Agreement

The MPM Entities and Mr. Evnin, along with all of the Issuer's officers, directors, and holders of substantially all of the Issuer's common stock, have agreed with the underwriters for the Issuer's initial public offering, subject to certain exceptions, not to offer, sell, contract to sell, pledge or otherwise dispose of or hedge any of its common stock or securities convertible into or exchangeable for shares of common stock for a 180-day period beginning on February 2, 2011 and ending on August 1, 2011 except with the prior written consent of Barclays Capital Inc. and Piper Jaffray & Co.

The 180-day restricted period under the agreements with the underwriters described above will be automatically extended if: (1) during the last 17 days of the 180-day restricted period the Issuer issues an earnings release or material news or a material event relating to the Issuer occurs; or (2) prior to the expiration of the 180-day restricted period, the Issuer announces that it will release earnings results or becomes aware that material news or a material event relating to the Issuer will occur during the 16-day period beginning on the last day of the 180-day restricted period, in which case the restrictions described in the preceding paragraph will continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event.

The foregoing description of the terms of the Investor Rights Agreement and the Lock-up Agreement is intended as a summary only and is qualified in its entirety by reference to the Investor Rights Agreement and Form of Letter Lock-up Agreement, which are filed as exhibits to this Schedule 13D and incorporated by reference herein.

Other than as described in this Schedule 13D, to the best of the Filing Persons' knowledge, there are no other contracts, arrangements, understandings or relationships (legal or otherwise) among the persons named in Item 2 and between such persons and any person with respect to any securities of the Issuer.

Item 7. Material to Be Filed as Exhibits

- A. Investor Rights Agreement by and among the Issuer and each of the persons and entities listed on Schedule A thereto, dated as of March 23, 2007 (incorporated by reference to Exhibit 10.3 to the Issuer's Registration Statement on Form S-1 (SEC File No. 333-170245), filed with the SEC on November 1, 2010).
- B. Form of Lock-up Letter Agreement
- C. Agreement regarding filing of joint Schedule 13D.

Signatures

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.

Date: February 17, 2011

MPM BioVentures IV GP LLC

By: MPM BioVentures IV LLC,
its Managing Member

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

MPM BioVentures IV LLC

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

MPM BioVentures IV-QP, L.P.

By: MPM BioVentures IV GP LLC, its General Partner

By: MPM BioVentures IV LLC, its Managing Member

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

MPM BioVentures IV GmbH & Co. Beteiligungs KG

By: MPM BioVentures IV GP LLC, in its capacity as
the Managing Limited Partner

By: MPM BioVentures IV LLC, its Managing Member

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

MPM Asset Management Investors BV4 LLC

By: MPM BioVentures IV LLC
Its: Manager

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

By: /s/ Ansbert Gadicke
Name: Ansbert Gadicke

By: /s/ Luke Evin
Name: Luke Evin

By: /s/ Steven St. Peter
Name: Steven St. Peter

By: /s/ William Greene
Name: William Greene

By: /s/ James Paul Scopa
Name: James Paul Scopa

By: /s/ Ashley Dombkowski
Name: Ashley Dombkowski

By: /s/ Vaughn M. Kailian
Name: Vaughn M. Kailian

By: /s/ John Vander Vort
Name: John Vander Vort

Schedule I

General Partners/Members

Ansbert Gadicke
c/o MPM Asset Management
The John Hancock Tower
200 Clarendon Street, 54th Floor
Boston, MA 02116

Principal Occupation: Member of the managing member of the general partner of MPM BioVentures IV-QP, L.P., member of the managing member of the managing limited partner of MPM BioVentures IV GmbH & Co. Beteiligungs KG and member of the manager of MPM Asset Management Investors BV4 LLC.

Citizenship: USA

Luke Evinin
c/o MPM Asset Management
The John Hancock Tower
200 Clarendon Street, 54th Floor
Boston, MA 02116

Principal Occupation: Member of the managing member of the general partner of MPM BioVentures IV-QP, L.P., member of the managing member of the managing limited partner of MPM BioVentures IV GmbH & Co. Beteiligungs KG and member of the manager of MPM Asset Management Investors BV4 LLC.

Citizenship: USA

Steven St. Peter
c/o MPM Asset Management
The John Hancock Tower
200 Clarendon Street, 54th Floor
Boston, MA 02116

Principal Occupation: Member of the managing member of the general partner of MPM BioVentures IV-QP, L.P., member of the managing member of the managing limited partner of MPM BioVentures IV GmbH & Co. Beteiligungs KG and member of the manager of MPM Asset Management Investors BV4 LLC.

Citizenship: USA

William Greene
c/o MPM Asset Management
601 Gateway Blvd. Suite 350
S. San Francisco, CA 94080

Principal Occupation: Member of the managing member of the general partner of MPM BioVentures IV-QP, L.P., member of the managing member of the managing limited partner of MPM BioVentures IV GmbH & Co. Beteiligungs KG and member of the manager of MPM Asset Management Investors BV4 LLC.

Citizenship: USA

James Paul Scopa
c/o MPM Asset Management
601 Gateway Blvd. Suite 350
S. San Francisco, CA 94080
Principal Occupation: Member of the managing member of the general partner of MPM BioVentures IV-QP, L.P., member of the managing member of the managing limited partner of MPM BioVentures IV GmbH & Co. Beteiligungs KG and member of the manager of MPM Asset Management Investors BV4 LLC.
Citizenship: USA

Ashley Dombkowski
c/o MPM Asset Management
601 Gateway Blvd. Suite 350
S. San Francisco, CA 94080
Principal Occupation: Member of the managing member of the general partner of MPM BioVentures IV-QP, L.P., member of the managing member of the managing limited partner of MPM BioVentures IV GmbH & Co. Beteiligungs KG and member of the manager of MPM Asset Management Investors BV4 LLC.
Citizenship: USA

Vaughn M. Kailian
c/o MPM Asset Management
The John Hancock Tower
200 Clarendon Street, 54th Floor
Boston, MA 02116
Principal Occupation: Member of the managing member of the general partner of MPM BioVentures IV-QP, L.P., member of the managing member of the managing limited partner of MPM BioVentures IV GmbH & Co. Beteiligungs KG and member of the manager of MPM Asset Management Investors BV4 LLC.
Citizenship: USA

John Vander Vort
c/o MPM Asset Management
The John Hancock Tower
200 Clarendon Street, 54th Floor
Boston, MA 02116
Principal Occupation: Member of the managing member of the general partner of MPM BioVentures IV-QP, L.P., member of the managing member of the managing limited partner of MPM BioVentures IV GmbH & Co. Beteiligungs KG and member of the manager of MPM Asset Management Investors BV4 LLC.
Citizenship: USA

Exhibit Index

- A. Investor Rights Agreement by and among the Issuer and each of the persons and entities listed on Schedule A thereto, dated as of March 23, 2007 (incorporated by reference to Exhibit 10.3 to the Issuer's Registration Statement on Form S-1 (SEC File No. 333-170245), filed with the SEC on November 1, 2010).
- B. Form of Lock-up Letter Agreement
- C. Agreement regarding filing of joint Schedule 13D.

Exhibit B

LOCK-UP LETTER AGREEMENT

BARCLAYS CAPITAL INC.
PIPER JAFFRAY & CO.
As Representatives of the several
Underwriters named in Schedule I
of the Underwriting Agreement,
c/o Barclays Capital Inc.
745 Seventh Avenue
New York, New York 10019

Ladies and Gentlemen:

The undersigned understands that you and certain other firms (the “*Underwriters*”) propose to enter into an Underwriting Agreement (the “*Underwriting Agreement*”) providing for the purchase by the Underwriters of shares (the “*Stock*”) of Common Stock, par value \$0.001 per share (the “*Common Stock*”), of Pacira Pharmaceuticals, Inc., a Delaware corporation (the “*Company*”), and that the Underwriters propose to reoffer the Stock to the public (the “*Offering*”).

In consideration of the execution of the Underwriting Agreement by the Underwriters, and for other good and valuable consideration, the undersigned hereby irrevocably agrees that, without the prior written consent of Barclays Capital Inc. and Piper Jaffray & Co., on behalf of the Underwriters, the undersigned will not, directly or indirectly, (1) offer for sale, sell, pledge, or otherwise dispose of (or enter into any transaction or device that is designed to, or could be expected to, result in the disposition by any person at any time in the future of) any shares of Common Stock (including, without limitation, shares of Common Stock that may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the Securities and Exchange Commission and shares of Common Stock that may be issued upon exercise of any options or warrants) or securities convertible into or exercisable or exchangeable for Common Stock, (2) enter into any swap or other derivatives transaction that transfers to another, in whole or in part, any of the economic benefits or risks of ownership of shares of Common Stock, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Common Stock or other securities, in cash or otherwise, (3) make any demand for or exercise any right or cause to be filed a registration statement, including any amendments thereto, with respect to the registration of any shares of Common Stock or securities convertible into or exercisable or exchangeable for Common Stock or any other securities of the Company, or (4) publicly disclose the intention to do any of the foregoing for a period commencing on the date hereof and ending on the 180th day after the date of the final prospectus used to sell the Stock (such 180-day period, the “*Lock-Up Period*”) pursuant to the Underwriting Agreement.

Notwithstanding the foregoing, if (1) during the last 17 days of the Lock-Up Period, the Company issues an earnings release or material news or a material event relating to the Company occurs, or (2) prior to the expiration of the Lock-Up Period, the Company announces that it will release earnings results during the 16-day period beginning on the last day of the Lock-Up Period, then the restrictions imposed by this Lock-Up Letter Agreement shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the announcement of the material news or the occurrence of the material event, unless the Representatives waive such extension in writing. The undersigned hereby acknowledges that the Company has agreed in the Underwriting Agreement to provide written notice of any event that would result in an extension of the Lock-Up Period pursuant to the previous sentence to the undersigned (in accordance with Section 5(x) of the Underwriting Agreement) and agrees that any such notice properly delivered will be deemed to have given to, and received by, the undersigned. The undersigned hereby further agrees that, prior to engaging in any transaction or taking any other action that is subject to the terms of this Lock-Up Letter Agreement during the period from the date of this Lock-Up Letter Agreement to and including the 34th day following the

expiration of the Lock-Up Period, it will give notice thereof to the Company and will not consummate such transaction or take any such action unless it has received written confirmation from the Company that the Lock-Up Period (as such may have been extended pursuant to this paragraph) has expired. Notwithstanding the foregoing or anything to the contrary herein, the restrictions contained in this Lock-Up Letter Agreement shall not apply to (i) shares of Common Stock acquired in open market transactions by the undersigned after the consummation of the Offering, (ii) bona fide gifts, shares transferred by will or intestate succession, sales or other dispositions of shares of any class of the Company's capital stock, in each case that are made exclusively between and among the undersigned or members of the undersigned's family, or affiliates of the undersigned, including its partners (if a partnership) or members (if a limited liability company), (iii) shares of the Company's capital stock transferred to any corporation, partnership, limited liability company, or other entity all of beneficial ownership interests of which are held by the undersigned, the undersigned's family or affiliates of the undersigned, (iv) the exercise of stock options to purchase shares of Common Stock granted under an equity incentive plan of the Company; *provided* that any shares of Common Stock obtained by such exercise or exchange shall remain subject to the terms of this Lock-Up Letter Agreement, and (v) shares of Common Stock acquired as a participant in the Offering; *provided* that, in the case of clauses (ii), (iii) and (iv) above, it shall be a condition to any such transfer that (a) the transferee/donee agrees to be bound by the terms of this Lock-Up Letter Agreement (including, without limitation, the restrictions set forth in the preceding sentence) to the same extent as if the transferee/donee were a party hereto, (b) each party (donor, donee, transferor or transferee) shall not be required by law (including without limitation the disclosure requirements of the Securities Act of 1933, as amended, and the Securities Exchange Act of 1934, as amended (the "*Exchange Act*")) to make, and shall agree to not voluntarily make, any public announcement of the transfer or disposition, and (c) the undersigned notifies Barclays Capital Inc, and Piper Jaffray & Co. at least two business days prior to the proposed transfer or disposition; *provided further* that no filing by any party (donor, donee, transferor or transferee) under the Exchange Act shall be required or shall be voluntarily made in connection with such transfer or distribution (other than, a filing on a Form 5, Schedule 13D or Schedule 13G (or 13D-A or 13G-A) made after the expiration of the 180-day period referred to above).

The restrictions set forth in this Lock-Up Letter Agreement shall not apply to the establishment of a trading plan that complies with Rule 10b5-1 under the Exchange Act; *provided however*, that no sales shall be made pursuant to such trading plan during the Lock-Up Period.

In furtherance of the foregoing, the Company and its transfer agent are hereby authorized to decline to make any transfer of securities if such transfer would constitute a violation or breach of this Lock-Up Letter Agreement.

It is understood that, if the Company notifies the Underwriters that it does not intend to proceed with the Offering, if the Underwriting Agreement does not become effective, if the Underwriting Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the Stock, or in the event that the Underwriting Agreement has not been executed on or before March 31, 2011, the undersigned will be released from its obligations under this Lock-Up Letter Agreement.

The undersigned understands that the Company and the Underwriters will proceed with the Offering in reliance on this Lock-Up Letter Agreement.

Whether or not the Offering actually occurs depends on a number of factors, including market conditions. Any Offering will only be made pursuant to an Underwriting Agreement, the terms of which are subject to negotiation between the Company and the Underwriters.

[Signature page follows]

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Lock-Up Letter Agreement and that, upon request, the undersigned will execute any additional documents necessary in connection with the enforcement hereof. Any obligations of the undersigned shall be binding upon the heirs, personal representatives, successors and assigns of the undersigned.

Very truly yours,

By: _____

Dated: _____

Exhibit C

Joint Filing Statement

I, the undersigned, hereby express my agreement that the attached Schedule 13D (and any amendments thereto) relating to the beneficial ownership by the undersigned of the equity securities of Pacira Pharmaceuticals, Inc. is filed on behalf of each of the undersigned.

Date: February 17, 2011

MPM BioVentures IV GP LLC

By: MPM BioVentures IV LLC,
its Managing Member

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

MPM BioVentures IV LLC

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

MPM BioVentures IV-QP, L.P.

By: MPM BioVentures IV GP LLC, its General Partner

By: MPM BioVentures IV LLC, its Managing Member

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

MPM BioVentures IV GmbH & Co. Beteiligungs KG

By: MPM BioVentures IV GP LLC, in its capacity as the Managing
Limited Partner

By: MPM BioVentures IV LLC, its Managing Member

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

MPM Asset Management Investors BV4 LLC

By: MPM BioVentures IV LLC
Its: Manager

By: /s/ Vaughn M. Kailian

Name: Vaughn M. Kailian

Title: Member

By: /s/ Ansbert Gadicke
Name: Ansbert Gadicke

By: /s/ Luke Evin
Name: Luke Evin

By: /s/ Steven St. Peter
Name: Steven St. Peter

By: /s/ William Greene
Name: William Greene

By: /s/ James Paul Scopa
Name: James Paul Scopa

By: /s/ Ashley Dombkowski
Name: Ashley Dombkowski

By: /s/ Vaughn M. Kailian
Name: Vaughn M. Kailian

By: /s/ John Vander Vort
Name: John Vander Vort