

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

14.97%

12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
PN

Page 3 of 20 pages

CUSIP NO. 60877T100 13G PAGE 4 OF 20 PAGES

1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Atlas Venture Parallel Fund V-B, C.V.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) []

(b) []

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Netherlands

5 SOLE VOTING POWER

0 shares

NUMBER OF
SHARES
BENEFICIALLY

6 SHARED VOTING POWER

OWNED BY
EACH

3,802,387 shares

REPORTING
PERSON
WITH

7 SOLE DISPOSITIVE POWER

0 shares

8 SHARED DISPOSITIVE POWER

3,802,387 shares

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,802,387 shares

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

14.97%

12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
PN

Page 4 of 20 pages

CUSIP NO. 60877T100 13G PAGE 5 OF 20 PAGES

1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Atlas Venture Entrepreneurs' Fund V, L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) []

(b) []

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

	5	SOLE VOTING POWER	
			0 shares
NUMBER OF SHARES	6	SHARED VOTING POWER	
BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH			3,802,387 shares
	7	SOLE DISPOSITIVE POWER	
			0 shares
	8	SHARED DISPOSITIVE POWER	
			3,802,387 shares

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,802,387 shares

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

14.97%

12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
PN

CUSIP NO. 60877T100

13G

PAGE 6 OF 20 PAGES

1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Atlas Venture Fund VI, L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)
(a) []
(b) []

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

	5	SOLE VOTING POWER	
			0 shares
NUMBER OF SHARES	6	SHARED VOTING POWER	
BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH			3,802,387 shares
	7	SOLE DISPOSITIVE POWER	
			0 shares
	8	SHARED DISPOSITIVE POWER	
			3,802,387 shares

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,802,387 shares

- 10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []
- 11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
14.97%
- 12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
PN

Page 6 of 20 pages

CUSIP NO. 60877T100 13G PAGE 7 OF 20 PAGES

- 1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Atlas Venture Entrepreneurs' Fund VI, L.P.
- 2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)
(a) []
(b) []
- 3 SEC USE ONLY
- 4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware
- | | | |
|---|---|--------------------------|
| | 5 | SOLE VOTING POWER |
| | | 0 shares |
| NUMBER OF
SHARES | 6 | SHARED VOTING POWER |
| BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH | | 3,802,387 shares |
| | 7 | SOLE DISPOSITIVE POWER |
| | | 0 shares |
| | 8 | SHARED DISPOSITIVE POWER |
| | | 3,802,387 shares |

- 9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
3,802,387 shares

- 10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []
- 11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
14.97%
- 12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
PN

Page 7 of 20 pages

CUSIP NO. 60877T100 13G PAGE 8 OF 20 PAGES

- 1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Atlas Venture Fund VI GmbH & Co. KG.
- 2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) []
(b) []

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Germany

5 SOLE VOTING POWER

0 shares

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

6 SHARED VOTING POWER

3,802,387 shares

7 SOLE DISPOSITIVE POWER

0 shares

8 SHARED DISPOSITIVE POWER

3,802,387 shares

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,802,387 shares

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

14.97%

12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
PN

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CUSIP NO. 60877T100

13G

PAGE 9 OF 20 PAGES

1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Atlas Venture Associates V, L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) []
(b) []

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5 SOLE VOTING POWER

0 shares

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

6 SHARED VOTING POWER

3,802,387 shares

7 SOLE DISPOSITIVE POWER

0 shares

8 SHARED DISPOSITIVE POWER

3,802,387 shares

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
3,802,387 shares
10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []
11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
14.97%
12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
PN

Page 9 of 20 pages

CUSIP NO. 60877T100 13G PAGE 10 OF 20 PAGES

1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)
Atlas Venture Associates VI, L.P.
2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)
(a) []
(b) []
3 SEC USE ONLY
4 CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
5 SOLE VOTING POWER
0 shares
NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH
6 SHARED VOTING POWER
3,802,387 shares
7 SOLE DISPOSITIVE POWER
0 shares
8 SHARED DISPOSITIVE POWER
3,802,387 shares
9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
3,802,387 shares
10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []
11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
14.97%
12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
PN

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CUSIP NO. 60877T100 13G PAGE 11 OF 20 PAGES

1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Atlas Venture Associates V, Inc.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)
(a) []
(b) []

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5 SOLE VOTING POWER

0 shares

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

6 SHARED VOTING POWER

3,802,387 shares

7 SOLE DISPOSITIVE POWER

0 shares

8 SHARED DISPOSITIVE POWER

3,802,387 shares

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,802,387 shares

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

14.97%

12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
CO

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CUSIP NO. 60877T100

13G

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1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Atlas Venture Associates VI, Inc.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)
(a) []
(b) []

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5 SOLE VOTING POWER

0 shares

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

6 SHARED VOTING POWER

3,802,387 shares

7 SOLE DISPOSITIVE POWER

0 shares

8 SHARED DISPOSITIVE POWER

3,802,387 shares

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,802,387 shares

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

14.97%

12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
CO

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CUSIP NO. 60877T100 13G PAGE 13 OF 20 PAGES

1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Axel Bichara

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) []

(b) []

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Germany

5 SOLE VOTING POWER

0 shares

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

6 SHARED VOTING POWER

3,802,387 shares

7 SOLE DISPOSITIVE POWER

0 shares

8 SHARED DISPOSITIVE POWER

3,802,387 shares

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,802,387 shares

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

14.97%

12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
IN

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CUSIP NO. 60877T100 13G PAGE 14 OF 20 PAGES

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

Jean-Francois Formela

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) []
(b) []

SEC USE ONLY

CITIZENSHIP OR PLACE OF ORGANIZATION

France

	5	SOLE VOTING POWER
		0 shares
NUMBER OF SHARES	6	SHARED VOTING POWER
BENEFICIALLY OWNED BY EACH		3,802,387 shares
REPORTING PERSON WITH	7	SOLE DISPOSITIVE POWER
		0 shares
	8	SHARED DISPOSITIVE POWER
		3,802,387 shares

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,802,387 shares

CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS) []

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

14.97%

TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
IN

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13G

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

Christopher Spray

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) []
(b) []

SEC USE ONLY

CITIZENSHIP OR PLACE OF ORGANIZATION

United Kingdom

	5	SOLE VOTING POWER
		0 shares
NUMBER OF SHARES	6	SHARED VOTING POWER
BENEFICIALLY OWNED BY EACH		3,802,387 shares
REPORTING	7	SOLE DISPOSITIVE POWER

PERSON
WITH

0 shares

8 SHARED DISPOSITIVE POWER

3,802,387 shares

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,802,387 shares

CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS)

[]

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

14.97%

TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
IN

Page 15 of 20 pages

Schedule 13G

Item 1(a). Name of Issuer: Momenta Pharmaceuticals, Inc.

Item 1(b). Address of Issuer's Principal Executive Offices:

675 West Kendall Street, Cambridge, MA 02142

Item 2(a). Name of Person Filing:

Atlas Venture Fund V, L.P. ("Atlas V"), Atlas Venture Fund V-A, C.V. ("Atlas V-A"), Atlas Venture Fund V-B, C.V. ("Atlas V-B"), Atlas Venture Entrepreneurs' Fund V, L.P. ("AVE V" and together with Atlas V, Atlas V-A and Atlas V-B, the "Atlas V Funds"), Atlas Venture Fund VI, L.P. ("Atlas VI"), Atlas Venture Fund VI GmbH & Co. KG ("Atlas VI GmbH"), Atlas Venture Entrepreneurs' Fund VI, L.P. ("AVE VI"), Atlas Venture Associates V, L.P. ("AVA V LP"), Atlas Venture Associates VI, L.P. ("AVA VI LP"), Atlas Venture Associates V, Inc. ("AVA V Inc."), Atlas Venture Associates VI, Inc. ("AVA VI Inc."), Axel Bichara ("Bichara"), Jean-Francois Formela ("Formela") and Christopher Spray ("Spray"). Atlas V, Atlas V-A, Atlas V-B, AVE V, Atlas VI, Atlas VI GmbH and AVE VI are referred to individually herein as a "Fund" and collectively as the "Funds". The persons and entities named in this Item 2(a) are referred to individually herein as a "Filing Person" and collectively as the "Filing Persons".

AVA V Inc. is the sole general partner of AVA V LP. AVA V LP is the sole general partner of the Atlas V Funds. Messrs. Bichara, Formela and Spray are directors of AVA V Inc.

AVA VI Inc. is the sole general partner of AVA VI LP. AVA VI LP is the sole general partner of Atlas VI and AVE VI and the managing limited partner of Atlas VI GmbH. Messrs. Bichara, Formela and Spray are directors of AVA VI Inc.

Item 2(b). Address of Principal Business Office or, if None, Residence:

The principal business office of each of the Filing Persons is:

890 Winter Street, Suite 320
Waltham, MA 02451

Item 2(c). Citizenship: Atlas V, AVE V, Atlas VI, AVE VI, AVA V LP and AVA VI LP is each a limited partnership formed under the laws of the state of Delaware. AVA V Inc. and AVA VI Inc. is each a corporation formed under the laws of the state of Delaware. Atlas V-A and Atlas V-B is each a limited partnership formed under the laws of The Netherlands. Atlas VI GmbH is a limited

partnership formed under the laws of Germany. Mr. Bichara is a citizen of Germany. Mr. Formela is a citizen of France. Mr. Spray is a citizen of the United Kingdom.

Item 2(d). Title of Class of Securities: Common Stock, \$0.0001 par value per share (the "Common Stock").

Item 2(e). CUSIP Number: 60877T100

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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 a:

Not Applicable.

Item 4. Ownership.

(a) Amount Beneficially Owned: Atlas V is the record holder of 1,202,263 shares of Common Stock as of December 31, 2004 (the "Atlas V Shares"). Atlas V-A is the record holder of 149,339 shares of Common Stock as of December 31, 2004 (the "Atlas V-A Shares"). Atlas V-B is the record holder of 149,339 shares of Common Stock as of December 31, 2004 (the "Atlas V-B Shares"). AVE V is the record holder of 20,010 shares of Common Stock as of December 31, 2004 (the "AVE V Shares"). Atlas VI is the record holder of 2,175,094 shares of Common Stock as of December 31, 2004 (the "Atlas VI Shares"). Atlas VI GmbH is the record holder of 39,827 shares of Common Stock as of December 31, 2004 (the "Atlas VI GmbH Shares"). AVE VI is the record holder of 66,515 shares of Common Stock as of December 31, 2004 (the "AVE VI Shares"). By virtue of their relationship as affiliated limited partnerships, each Fund may be deemed to share the power to direct the disposition and vote the Atlas V Shares, the Atlas V-A Shares, the Atlas V-B Shares, the AVE V Shares, the Atlas VI Shares, the Atlas VI GmbH Shares and the AVE VI Shares, for an aggregate of 3,802,387 shares of Common Stock (the "Record Shares"). As general partner or managing limited partner, as the case may be, of certain of the Funds, and by virtue of the Funds relationship as affiliated limited partnerships, each of AVA V LP and AVA VI LP may also be deemed to beneficially own the Record Shares. As the general partner of AVA V LP and AVA VI LP respectively, AVA V Inc. and AVA VI Inc. may also be deemed to beneficially own the Record Shares. In their capacities as directors of AVA V Inc. and AVA VI Inc. each of Messrs. Bichara, Formela and Spray may be deemed to beneficially own the Record Shares.

Each Filing Person disclaims beneficial ownership of the Record Shares except for such shares, if any, such Filing Person holds of record.

(b) Percent of Class:

Each Filing Person: 14.97%

(c) Number of shares as to which the person has:

(i) sole power to vote or to direct the vote:

0

(ii) shared power to vote or to direct the vote:

3,802,387 for each Filing Person

(iii) sole power to dispose or direct the disposition of:

0

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(iv) shared power to dispose or direct the disposition of:
3,802,387 for each Filing Person

- Item 5. Ownership of Five Percent or Less of a Class.
Not Applicable.
- Item 6. Ownership of More than Five Percent on Behalf of Another Person.
Not Applicable.
- 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 the Group.
Not Applicable. The Filing Persons expressly disclaim membership in a "group" as used in Rule 13d-5(b)(1).
- Item 9. Notice of Dissolution of Group.
Not Applicable.
- Item 10. Certification.
Not Applicable. This statement on Schedule 13G is not filed pursuant to Rule 13d-1(b) or Rule 13d-1(c).

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SIGNATURE

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: February 9, 2005

*

Axel Bichara

*

Jean-Francois Formela

*

Christopher Spray

Atlas Venture Fund VI, L.P.
Atlas Venture Entrepreneurs' Fund VI, L.P.
By: Atlas Venture Associates VI, L.P.
their general partner
By: Atlas Venture Associates VI, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Fund VI GmbH & Co. KG
By: Atlas Venture Associates VI, L.P.

its managing limited partner
By: Atlas Venture Associates VI, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Associates VI, L.P.
By: Atlas Venture Associates VI, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

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Atlas Venture Associates VI, Inc.

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Fund V, L.P.
Atlas Venture Entrepreneurs' Fund V, L.P.
Atlas Venture Parallel Fund V-A, C.V.
Atlas Venture Parallel Fund V-B, C.V.
By: Atlas Venture Associates V, L.P.
their general partner
By: Atlas Venture Associates V, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Associates V, L.P.
By: Atlas Venture Associates V, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Associates V, Inc.

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

* By: /s/ Jeanne Larkin Henry

By Jeanne Larkin Henry in her
individual capacity and as
Attorney-in-Fact

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Exhibit 1

AGREEMENT

Pursuant to Rule 13d-1(k) (1) under the Securities and Exchange Act of 1934, each of the undersigned hereby agree that only one statement containing the information required by Schedule 13G need be filed with respect to the ownership by each of the undersigned of shares of stock of Momenta Pharmaceuticals, Inc. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original.

Dated: February 9, 2005

*

Axel Bichara

*

Jean-Francois Formela

*

Christopher Spray

Atlas Venture Fund VI, L.P.
Atlas Venture Entrepreneurs' Fund VI, L.P.
By: Atlas Venture Associates VI, L.P.
their general partner
By: Atlas Venture Associates VI, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Fund VI GmbH & Co. KG
By: Atlas Venture Associates VI, L.P.
its managing limited partner
By: Atlas Venture Associates VI, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Associates VI, L.P.
By: Atlas Venture Associates VI, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Associates VI, Inc.

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Fund V, L.P.
Atlas Venture Entrepreneurs' Fund V, L.P.
Atlas Venture Parallel Fund V-A, C.V.
Atlas Venture Parallel Fund V-B, C.V.
By: Atlas Venture Associates V, L.P.
their general partner
By: Atlas Venture Associates V, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Associates V, L.P.
By: Atlas Venture Associates V, Inc.
its general partner

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

Atlas Venture Associates V, Inc.

By: *

Name: Jeanne Larkin Henry

Title: Vice-President

* By: /s/ Jeanne Larkin Henry

By Jeanne Larkin Henry in her
individual capacity and as
Attorney-in-Fact

Exhibit 2

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints each and any of Christopher J. Spray and Jeanne Larkin Henry his true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for him and in his name, place and stead, in any and all capacities (until revoked in writing) to sign any and all instruments, certificates and documents required to be executed on behalf of himself individually or on behalf of each or any of Atlas Venture Fund II, L.P., Atlas Venture Associates II, L.P., Atlas Venture Fund III, L.P., Atlas Venture Entrepreneurs' Fund III, L.P., Atlas Venture Associates III, L.P., Atlas Venture Associates III, Inc., Atlas Venture Fund IV, L.P., Atlas Venture Entrepreneurs' Fund IV, L.P., Atlas Venture Parallel Fund IV-A, C.V., Atlas Venture Parallel Fund IV-B, C.V., Atlas Venture Associates IV, L.P., Atlas Venture Associates IV, Inc., Atlas Venture Fund V, L.P., Atlas Venture Entrepreneurs' Fund V, L.P., Atlas Venture Parallel Fund V-A, C.V., Atlas Venture Parallel Fund V-B, C.V., Atlas Venture Associates V, L.P., Atlas Venture Associates V, Inc., Atlas Venture Fund VI, L.P., Atlas Venture Entrepreneurs'

Fund VI, L.P., Atlas Venture Fund VI GmbH & Co. KG, Atlas Venture Associates VI, L.P. and Atlas Venture Associates VI, Inc. pursuant to sections 13 and 16 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and any and all regulations promulgated thereunder, and to file the same, with all exhibits thereto, and any other documents in connection therewith, with the Securities and Exchange Commission, and with any other entity when and if such is mandated by the Exchange Act or by the By-laws of the National Association of Securities Dealers, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary fully to all intents and purposes as he might or could do in person thereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, this Power of Attorney has been signed as of the 8th day of February, 2005.

/s/ Axel Bichara

Axel Bichara

/s/ Jean-Francois Formela

Jean-Francois Formela

/s/ Christopher Spray

Christopher Spray