

MIRAGEN THERAPEUTICS, INC.  
 Form 3  
 February 13, 2017

**FORM 3 UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

OMB APPROVAL

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**INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934,  
 Section 17(a) of the Public Utility Holding Company Act of 1935 or Section  
 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person * Â Booth Bruce (Last) (First) (Middle)  C/O MIRAGEN THERAPEUTICS, INC., Â 6200 LOOKOUT ROAD (Street)  BOULDER, Â CO Â 80301 (City) (State) (Zip)	2. Date of Event Requiring Statement (Month/Day/Year) 02/13/2017	3. Issuer Name and Ticker or Trading Symbol MIRAGEN THERAPEUTICS, INC. [MGEN]	4. Relationship of Reporting Person(s) to Issuer  (Check all applicable)  <input checked="" type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input type="checkbox"/> Officer <input type="checkbox"/> Other (give title below)    (specify below)	5. If Amendment, Date Original Filed(Month/Day/Year)	6. Individual or Joint/Group Filing(Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person
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**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	3,142,580 <sup>(1)</sup>	I	See Footnote <sup>(2)</sup> <sup>(3)</sup>
Common Stock	805,636 <sup>(1)</sup>	I	See Footnote <sup>(4)</sup>

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly. SEC 1473 (7-02)

**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 control number.**

**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	4. Conversion or Exercise	5. Ownership Form of	6. Nature of Indirect Beneficial Ownership (Instr. 5)
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Date Exercisable	Expiration Date	Title	Amount or Number of Shares	Price of Derivative Security	Derivative Security: Direct (D) or Indirect (I)

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Booth Bruce C/O MIRAGEN THERAPEUTICS, INC. 6200 LOOKOUT ROAD BOULDER, CO 80301	X	A	A	A

## Signatures

/s/ Bruce L. Booth  
Date: 02/13/2017

Signature of Reporting Person: \_\_\_\_\_ Date: \_\_\_\_\_

## Explanation of Responses:

- \* 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).
- (1) Shares of common stock of the corporation then known as Miragen Therapeutics, Inc. ("Old Miragen") were converted into shares of the Issuer pursuant to that certain Agreement and Plan of Merger and Reorganization, dated as of October 31, 2016, by and among the Issuer, Signal Merger Sub, Inc. and Old Miragen (the "Merger Agreement"). Pursuant to the terms of the Merger Agreement, each share of common stock was converted into 0.7031 shares of the Issuer's common stock.
- Represents 4,469,607 shares of common stock of Old Miragen prior to conversion pursuant to the Merger Agreement including: 83,250 shares of common stock of Old Miragen; and shares of common stock of Old Miragen issued upon the conversion of 2,661,454 shares of
- (2) Series A preferred stock of Old Miragen, 479,401 shares of Series B preferred stock of Old Miragen and 1,245,502 shares of Series C preferred stock of Old Miragen. Immediately prior to the effective time of the merger, each share of Old Miragen preferred stock converted into one share of Old Miragen's common stock.
- (3) The shares are held by Atlas Venture Fund VII, L.P. ("Atlas Venture VII"). Atlas Venture Associates VII, L.P. ("AVA VII LP") is the general partner of Atlas Venture VII, and Atlas Venture Associates VII, Inc. ("AVA VII Inc.") is the general partner of AVA VII LP. Each of AVA VII LP and AVA VII Inc. disclaims Section 16 beneficial ownership of the securities held by Atlas Venture VII, except to the extent of its pecuniary interest therein, if any.
- Represents 1,145,835 shares of common stock of Old Miragen prior to conversion pursuant to the Merger Agreement. The shares are held by Atlas Venture Fund X, L.P. ("Atlas Venture X"). Atlas Venture Associates X, L.P. ("AVA X LP"), is the general partner of Atlas
- (4) Venture X, and Atlas Venture Associates X, LLC ("AVA X LLC"), is the general partner of AVA X LP. Each of AVA X LP and AVA X LLC disclaims Section 16 beneficial ownership of the securities held by Atlas Venture X, except to the extent of its pecuniary interest therein, if any.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, See Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.