

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-8
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

ICAGEN, INC.

(Exact name of registrant as specified in its charter)

Delaware
*(State or other jurisdiction
of incorporation or organization)*

20-0982060
*(I.R.S. Employer
Identification Number)*

**4222 Emperor Blvd., Suite 350
Durham, North Carolina 27703
(919) 941- 5206**
*(Address, including ZIP code, and telephone number,
including area code, of registrant's principal executive office)*

**2005 STOCK OPTION PLAN
2015 STOCK INCENTIVE PLAN**
(Full title of the Plan)

**Richard Cunningham
Icagen, Inc.
4222 Emperor Blvd., Suite 350
Durham, North Carolina 27703
(919) 941- 5206**
(Name, address and telephone number of agent of services)

WITH COPIES TO:

**Leslie Marlow, Esq.
Gracin & Marlow, LLP
The Chrysler Building
405 Lexington Avenue, 26th Floor
New York, New York 10174
(212) 907-6457**
(Name, address and telephone number)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Do not check if smaller reporting company):

Large Accelerated Filer

Accelerated Filer

Non-Accelerated Filer

Smaller Reporting Company

CALCULATION OF REGISTRATION FEE

TITLE OF SECURITIES BEING REGISTERED	AMOUNT TO BE REGISTERED (1)(2)	PROPOSED MAXIMUM OFFERING PRICE PER SHARE	PROPOSED MAXIMUM AGGREGATE OFFERING PRICE	AMOUNT OF REGISTRATION FEE (3)
Common Stock, par value \$0.001 per share, under the 2005 Stock Option Plan	790,770(4) \$	3.60(5) \$	2,846,772 \$	286.67
Common Stock, par value \$0.001 per share, under the 2015 Stock Incentive Plan	800,000(6) \$	3.50(7) \$	2,800,000 \$	281.96
Total	1,590,770		\$ 5,646,772 \$	568.63

- (1) The securities to be registered include options and other rights to acquire the common stock of the Registrant.
- (2) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement also covers any additional securities that may be offered or issued in connection with any stock split, stock dividend or similar transaction.
- (3) Calculated under Section 6(b) of the Securities Act as .0001007 of the proposed maximum aggregate offering price.
- (4) Represents shares of the Registrant's common stock issuable pursuant to outstanding options granted under the Registrant's 2005 Stock Option Plan. The Registrant's 2005 Stock Option Plan has been terminated; no additional stock awards will be granted under the Registrant's 2005 Stock Option Plan and shares are no longer available for the grant of stock awards under the Registrant's 2005 Stock Option Plan.
- (5) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(h) of the Securities Act. The proposed maximum aggregate offering price per share and proposed maximum aggregate offering price for the 790,770 shares of the Registrant's common stock reserved for issuance upon the exercise of outstanding stock options granted under the Registrant's 2005 Stock Option Plan are calculated using a weighted average exercise price of \$3.60 per share based on exercise prices for such outstanding stock options ranging from \$0.40 to \$11.42 per share.
- (6) Represents 602,500 shares of the Registrant's common stock issuable pursuant to outstanding options granted under the Registrant's 2015 Stock Incentive Plan and 197,500 shares of the Registrant's common stock reserved for future grant under the Registrant's 2015 Stock Incentive Plan.
- (7) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(h) of the Securities Act. The proposed maximum aggregate offering price per share and proposed maximum aggregate offering price for the 800,000 shares of the Registrant's common stock reserved for issuance upon the exercise of outstanding stock options granted under the Registrant's 2015 Stock Incentive Plan and future grants are calculated using an exercise price of \$3.50 per share, which is the exercise price of 602,500 outstanding options and the book price of the remaining shares available for issuance under the 2015 Stock Incentive Plan.

EXPLANATORY NOTE

Icagen, Inc. (the “Registrant” or the “Company”) hereby files this Registration Statement on Form S-8 relating to its common stock, par value \$0.001 per share (the “Common Stock”), which have been reserved for issuance and are issuable pursuant to the Company’s 2005 Stock Option Plan and the 2015 Stock Incentive Plan (hereinafter referred to as the “Plans”).

PART I INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The information specified in Item 1 and Item 2 of Part I of this Registration Statement on Form S-8 (the “Registration Statement”) is omitted from this filing in accordance with the provisions of Rule 428 under the Securities Act of 1933, as amended (the “Securities Act”), and the introductory note to Part I of Form S-8. The documents containing the information specified in Part I will be delivered to the participants in the Plans as required by Rule 428(b)(1). Such documents and the documents incorporated by reference in this Registration Statement pursuant to Item 3 of Part II of this Registration Statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

PART II INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE

The Securities and Exchange Commission (the “Commission”) allows us to “incorporate by reference” the information we file with it which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the Commission will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings made with the Commission under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) between the date of this prospectus and the termination of the offering:

- Our Annual Report on Form 10-K for the year ended December 31, 2015 filed with the Commission on April 14, 2016;
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2016 filed with the Commission on May 19, 2016;
- Our Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 filed with the Commission on August 15, 2016;
- Our Current Reports on Form 8-K filed with the Commission on February 26, May 20, June 30, July 7 and July 19, 2016; and
- The description of our common stock set forth in our registration statement on Form 8-A, filed with the Commission on June 28, 2012 (File No. 000-54748).

All documents filed by the Registrant pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act subsequent to the filing of this Registration Statement and prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference into this Registration Statement and to be a part hereof from the date of filing such documents, except as to specific sections of such documents as set forth therein. The Registrant is not, however, incorporating by reference any documents or portions thereof, whether specifically listed above or filed in the future, that are not deemed “filed” with the Commission, including any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained in any subsequently filed document that also is deemed to be incorporated by reference herein modifies or supersedes such statement.

ITEM 4. DESCRIPTION OF SECURITIES

Not applicable.

ITEM 5. INTERESTS OF NAMED EXPERTS AND COUNSEL

Not applicable.

ITEM 6. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act of 1933, as amended (the "Securities Act").

Our second amended and restated certificate of incorporation, as amended and restated, provides for indemnification of our directors and executive officers to the maximum extent permitted by the Delaware General Corporation Law (the "DGCL"), and our amended and restated bylaws provide for indemnification of our directors and executive officers to the maximum extent permitted by the DGCL.

ITEM 7. EXEMPTION FROM REGISTRATION CLAIMED

Not applicable.

ITEM 8. EXHIBITS

Exhibit No.	Description of Document
3.1	Second Amended and Restated Certificate of Incorporation (1)
3.2	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation (2)
3.3	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation (3)
3.4	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation (4)
3.5	By-Laws (5)
4.1	2005 Stock Option Plan (1)
4.2	2015 Incentive Stock Plan (6)
4.3	Form of Stock Option Agreement 2005 Incentive Stock Plan*
4.4	Form of Stock Option Agreement 2015 Incentive Stock Plan (7)
5.1	Opinion of Gracin & Marlow, LLP regarding Legality of Shares*
23.1	Consent of RBSM, LLP, Independent Registered Public Accounting Firm*
23.2	Consent of Gracin & Marlow, LLP (contained in Exhibit 5.1)
24.1	Power of Attorney of directors and certain officers of the Company (included on the signature page of this Registration Statement)

*Filed herewith

(1) Previously filed as Exhibits 3.5 and 4.3 to the Registrant's Form S-1 (File No. 333-179508) originally filed with the Securities and Exchange Commission on February 14, 2012

(2) Previously filed as Exhibits 3.1 to the Registrant's Current Report on Form 8-K (File No. 000-54748) filed with the Securities and Exchange Commission on December 5, 2014

(3) Previously filed as Exhibits 3.1 to the Registrant's Current Report on Form 8-K (File No. 000-54748) filed with the Securities and Exchange Commission on August 31, 2015

(4) Previously filed as Exhibits 3.1 to the Registrant's Current Report on Form 8-K (File No. 000-54748) filed with the Securities and Exchange Commission on March 26, 2015

(5) Previously filed as Exhibits 3.1 to the Registrant's Current Report on Form 8-K (File No. 000-54748) filed with the Securities and Exchange Commission on February 25, 2015

(6) Previously filed as Exhibit B to the Registrants Definitive Information Statement on Schedule 14C (File No. 000-54748) filed with the Securities and Exchange Commission on March 2, 2016

(7) Previously filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K (File No. 000-54748) filed with the Securities and Exchange Commission on December 29, 2015

ITEM 9. UNDERTAKINGS

The undersigned Registrant hereby undertakes:

1. To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

i. To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933, as amended;

ii. To reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement;

iii. To include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in the registration statement; provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this Registration Statement.

2. That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

3. To remove from registration by means of a post-effective amendment any of the securities being registered that remain unsold at the termination of the offering.

4. That, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

5. Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Durham, North Carolina, on the 16th day of August, 2016.

ICAGEN, INC.

By: /s/ Richard Cunningham
Name: Richard Cunningham
Title: President and Chief Executive Officer
(Principal Executive Officer)

By: /s/ Mark Korb
Name: Mark Korb
Title: Chief Financial Officer
(Principal Financial and Accounting Officer)

POWER OF ATTORNEY AND SIGNATURES

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Richard Cunningham and Mark Korb, and each of them, as his or her true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments to this Registration Statement, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or his or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Richard Cunningham</u> Richard Cunningham	Chief Executive Officer (Principal Executive Officer) and Director	August 16, 2016
<u>/s/ Mark Korb</u> Mark Korb	Chief Financial Officer (Principal Financial and Accounting Officer)	August 16, 2016
<u>/s/ Timothy Tyson</u> Timothy Tyson	Non-Executive Chairman	August 16, 2016
<u>/s/ Edward Roffman</u> Edward Roffman	Director	August 16, 2016
<u>/s/ Vincent Palmieri</u> Vincent Palmieri	Director	August 16, 2016
<u>/s/ Michael Taglich</u> Michael Taglich	Director	August 16, 2016
<u>/s/ Clive Kabatznik</u> Clive Kabatznik	Director	August 16, 2016
<u>/s/ Benjamin Warner</u> Benjamin Warner	Director	August 16, 2016

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CALDERA PHARMACEUTICALS, INC.
NOTICE OF STOCK OPTION AGREEMENT
(INCENTIVE STOCK OPTION OR NONSTATUTORY STOCK OPTION)

Caldera Pharmaceuticals, Inc.(the “*Company*”), pursuant to its 2005 Stock Option Plan (the “*Plan*”), hereby grants to Optionholder an option to purchase the number of shares of the Company’s Common Stock set forth below. This option is subject to all terms and conditions as set forth herein and in the related Option Agreement, the Plan and the Notice of Exercise, each of which are attached hereto and incorporated herein in their entirety.

Optionholder:
Date of Grant:
Vesting Commencement Date:
Number of Shares Subject to Option:
Exercise Price (Per Share):
Expiration Date:

Type of Grant: Incentive Stock Option¹ Nonstatutory Stock Option

Vesting Schedule: Immediate as to all shares subject to the option

Payment: By one or a combination of the following items (described in the Option Agreement):

- By cash or check
- By delivery of already owned shares
- By Cashless Exercise

Additional Terms/Acknowledgements: The undersigned Optionholder acknowledges receipt of, and understands and agrees to, this Notice, the Stock Option Agreement and the Plan. Optionholder further acknowledges that as of the Date of Grant, this Notice, the Stock Option Agreement and the Plan set forth the entire understanding between Optionholder and the Company regarding the acquisition of stock in the Company referred to herein and supersede all prior oral and written agreements on that subject.

CALDERA PHARMACEUTICALS, INC.

OPTIONHOLDER:

By: _____
Name: _____
Date: _____

Name: _____
Date: _____

ATTACHMENTS: 2005 Stock Option Plan, Option Agreement and Notice of Exercise

¹ If this is an Incentive Stock Option, it (plus other outstanding Incentive Stock Options) cannot be first *exercisable* for more than \$100,000 in value (measured by exercise price) in any calendar year. Any excess over \$100,000 is a Non-statutory Stock Option.

CALDERA PHARMACEUTICALS, INC.
STOCK OPTION AGREEMENT
(INCENTIVE STOCK OPTION OR NONSTATUTORY STOCK OPTION)

Pursuant to this Option Agreement, Caldera Pharmaceuticals, Inc. (the "*Company*") has granted you an option under its 2005 Stock Option Plan (the "*Plan*") to purchase the number of shares of the Company's Common Stock indicated in the Notice at the exercise price indicated in the Notice. Defined terms not explicitly defined in this Option Agreement but defined in the Plan shall have the same definitions as in the Plan.

The details of your option are as follows:

1 . **VESTING.** Your Option shall fully vest and become exercisable with respect to all of your Option Shares as described in your employment contract or other service agreement with the Company. For any shares not described in your employment or service agreement or if you do not have an agreement with the Company, subject to the limitations contained herein, your option will vest as provided in the Notice, provided that vesting will cease upon the termination of your employment, consulting arrangement or provision of service for the Company, as applicable. Notwithstanding the foregoing, if you have been continuously employed by the Company or an Affiliate or providing services to the Company or an Affiliate from the date of Grant until a Change in Control of the Company, the portion of your outstanding Option which has not become vested at the date of such event shall immediately vest and become exercisable with respect to 100% of the Shares simultaneously with the consummation of the Change in Control of the Company.

2 . **NUMBER OF SHARES AND EXERCISE PRICE.** The number of shares of common stock (the "*Shares*") subject to your Option and your exercise price per share referenced in the Notice may be adjusted from time to time for certain events, including such as stock dividends, split ups, mergers, and the other events specified in the Plan.

3 . **METHOD OF PAYMENT .** Payment of the exercise price is due in full upon exercise of all or any part of your option. You may elect to make payment of the exercise price in cash or by check or by delivery to the Company of certificates representing shares of outstanding common stock of the Company already owned by you that are owned free and clear of any liens, claims, encumbrances or security interests together with stock powers duly executed and with signature guaranteed. In addition, you may elect to make payment through a "cashless exercise" such that, without the payment of any funds, you may exercise your Option and receive the net number of Shares equal to (x) the number of Shares as to which the Option is being exercised, multiplied by (y) a fraction, the numerator of which is the Fair Market Value per Share (on such date as is determined by the Board or a Committee thereof if a Committee is designated to administer the Plan) less the Exercise Price per Share, and the denominator of which is such Fair Market Value per Share (the number of net Shares to be received shall be rounded down to the nearest whole number of Shares). In the event payment is made by delivery of such shares, said shares shall be deemed to have a per share value equal to the per share market value of the shares on the date of exercise. Notwithstanding the foregoing, you may not exercise your option by tender to the Company of common stock to the extent such tender would violate the provisions of any law, regulation or agreement restricting the redemption of the Company's stock.

4. **WHOLE SHARES.** You may exercise your Option only for whole shares of common stock.

5. **SECURITIES LAW COMPLIANCE.** Notwithstanding anything to the contrary contained herein, you may not exercise your option unless the shares of common stock issuable upon such exercise are then registered under the Securities Act or, if such shares of common stock are not then so registered, the Company has determined that such exercise and issuance would be exempt from the registration requirements of the Securities Act. The exercise of your option also must comply with other applicable laws and regulations governing your option, and you may not exercise your option if the Company determines that such exercise would not be in material compliance with such laws and regulations.

6. **TERM.** You may not exercise your Option before the commencement or after the expiration of its term. The term of your Option commences on the Date of Grant and unless otherwise specified in the Notice expires upon the earliest of:

- (a) Immediately upon the termination of your employment or consulting arrangement or other arrangement for the provision of services;
- (b) The Expiration Date indicated in the Notice; or
- (c) The day before the tenth (10th) anniversary of the Date of Grant.

If your Option is an Incentive Stock Option, note that to obtain the federal income tax advantages associated with an Incentive Stock Option, the Code requires that at all times beginning on the date of grant of your Option and ending on the day three (3) months before the date of your Option's exercise, you must be an employee of the Company or an Affiliate, except in the event of your death or Disability.

7. **EXERCISE.**

(a) You may exercise the vested portion of your Option during its term by delivering a Notice of Exercise (in a form designated by the Company) together with the exercise price to the Secretary of the Company, or to such other person as the Company may designate, during regular business hours, together with such additional documents as the Company may then require. Each election to exercise this Option shall be in writing, signed by you, and delivered or mailed to the Chief Financial Officer of the Company at its principal office at One Kendall Square, Suite B2002, Cambridge, Massachusetts, 02139. In the event an Option is exercised by the executor or administrator of your estate, or by the person or person to whom the Option has been transferred by your will or the applicable laws of descent and distribution, the Company shall be under no obligation to deliver stock thereunder unless and until the Company is satisfied that the person or person exercising the option is or are your duly appointed executor or administrator or the person to whom the option has been transferred by your will or by the applicable laws of descent and distribution.

(b) By exercising your Option you agree that, as a condition to any exercise of your Option, the Company may require you to enter into an arrangement providing for the payment by you to the Company of any tax withholding obligation of the Company arising by reason of (1) the exercise of your Option; (2) the lapse of any substantial risk of forfeiture to which the shares of Common Stock are subject at the time of exercise; or (3) the disposition of shares of Common Stock acquired upon such exercise.

(c) If your Option is an Incentive Stock Option, by exercising your Option you agree that you will notify the Company in writing within fifteen (15) days after the date of any disposition of any of the shares of the Common Stock issued upon exercise of your option that occurs within two (2) years after the date of your option grant or within one (1) year after such shares of Common Stock are transferred upon exercise of your Option.

8. **PAYMENT.**

(a) Payment in full by a certified or bank check should be made for all the shares of which your option is exercised at the time of such exercise, and no shares shall be delivered until such payment is made.

(b) Alternatively, payment may be made by delivering to the Company (i) shares of outstanding Common Stock of the Company together with stock powers duly executed and with signature guaranteed. In the event payment is made in whole or in part by such shares, said shares shall be deemed to have a per share value equal to the closing price of the shares on the last trading day immediately preceding the date the shares are then being issued, or (ii) immediately tendering back to the Company sufficient shares of the Common Stock acquired through exercise of the Option.

(c) The Company shall not be obligated to deliver any stock unless and until (i) all applicable Federal and state laws and regulations have been complied with, and (ii) the Shares to be delivered have been listed, or authorized to be added to the list by the applicable exchange where they are listed; and all legal matters in connection with the issuance and delivery of the Shares have been approved by counsel for the Company. You shall have no rights as a shareholder until the stock is actually delivered to you.

9. **TRANSFERABILITY.**

(a) If your Option is an Incentive Stock Option, your Option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during your life only by you. Notwithstanding the foregoing, by delivering written notice to the Company, in a form satisfactory to the Company, you may designate a third party who, in the event of your death, shall thereafter be entitled to exercise your option.

(b) If your Option is a Nonstatutory Stock Option, your Option is not transferable, except (i) by will or by the laws of descent and distribution; (ii) with the prior written approval of the Company, by instrument to an *inter vivos* or testamentary trust, in a form accepted by the Company, in which the option is to be passed to beneficiaries upon the death of the trustor (settlor); and (iii) with the prior written approval of the Company, by gift, in a form accepted by the Company, to a permitted transferee under Rule 701 of the Securities Act.

(c) You agree not to effect any public sale or distribution of any equity securities of the Company, or any securities convertible into or exchangeable or exercisable for such securities, during the seven days prior to and the 180 days after the effectiveness of any underwritten public offering of the Company's equity securities (or such longer or shorter period as may be requested in writing by the managing underwriter and agreed to in writing by the Company) (the "**Market Standoff Period**"), except as part of such underwritten registration if otherwise permitted. In addition, you agree to execute any further letters, agreements and/or other documents requested by the Company or its underwriters which are consistent with the terms of this Section 9(c). The Company may impose stop-transfer instructions with respect to securities subject to the foregoing restrictions until the end of such Market Standoff Period.

10. **TERMINATION.**

(a) If you are a consultant or directors and your relationship with the Company terminates for any reason your Option shall terminate immediately. If you are an employee and your relationship with the Company terminates for any reason not listed below, your Option shall terminate immediately.

(b) If your employment is terminated by the Company without Cause or by you for any reason other than Retirement your Option shall terminate on the ninetieth (90th) day after such termination and you may exercise your option prior to such time but only to the extent to which you were entitled on the date of termination. If your employment is terminated due to Retirement your Option shall terminate on the ninetieth (90th) day after the date of Retirement and you may exercise your option prior to such time but only to the extent to which you were entitled on the date of termination. Nothing herein shall be construed as extending the exercisability of your Option to a date that is after the expiration date of the Option set forth in this Agreement or a date that is more than ten (10) years after your option is granted.

(c) If your employment is terminated because of your disability, your option shall terminate one (1) year after such termination and you may exercise your option prior to such time but only to the extent to which you were entitled on the date of such termination. Nothing herein shall be construed as extending the exercisability of your Option to a date that is after the expiration date of the option set forth in this Agreement or a date that is more than ten (10) years after the date your Option is granted.

(d) If your employment is terminated as a result of your death, your Option shall terminate one (1) year after the anniversary of your death, and your executor, administrator or other legal representative of your estate or the person or persons to whom your rights under your Option shall pass by will or the laws of descent and distribution may exercise your option prior to such time but only to the extent to which you were entitled on the date of termination. Nothing herein shall be construed as extending the exercisability of your Option to a date to a date that is after the expiration date of the Option set forth in this Agreement or more than ten (10) years after the date your Option is granted.

11. **OPTION NOT A SERVICE CONTRACT.** Your Option is not an employment or service contract, and nothing in your option shall be deemed to create in any way whatsoever any obligation on your part to continue in the employ of the Company or an Affiliate, or of the Company or an Affiliate to continue your employment. In addition, nothing in your Option shall obligate the Company or an Affiliate, their respective stockholders, Boards of Directors, officers or employees to continue any relationship that you might have as a Director or consultant for the Company or an affiliate.

12. **WITHHOLDING OBLIGATIONS.**

(a) At the time you exercise your Option, in whole or in part, or at any time thereafter as requested by the Company, you hereby authorize withholding from payroll and any other amounts payable to you, and otherwise agree to make adequate provision for any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company or an affiliate, if any, which arise in connection with the exercise of your Option.

(b) Upon your request and subject to approval by the Company, in its sole discretion, and compliance with any applicable legal conditions or restrictions, the Company may withhold from fully vested shares of Common Stock otherwise issuable to you upon the exercise of your Option a number of whole shares of Common Stock having a fair market value, determined by the Company as of the date of exercise based on the closing price of the shares on the last trading day immediately preceding the date the shares are then being issued, not in excess of the minimum amount of tax required to be withheld by law (or such lower amount as may be necessary to avoid classification of your Option as a liability for financial accounting purposes). If the date of determination of any tax withholding obligation is deferred to a date later than the date of exercise of your Option, share withholding pursuant to the preceding sentence shall not be permitted unless you make a proper and timely election under Section 83(b) of the Code, covering the aggregate number of shares of Common Stock acquired upon such exercise with respect to which such determination is otherwise deferred, to accelerate the determination of such tax withholding obligation to the date of exercise of your Option. Notwithstanding the filing of such election, shares of Common Stock shall be withheld solely from fully vested shares of Common Stock determined as of the date of exercise of your Option that are otherwise issuable to you upon such exercise. Any adverse consequences to you arising in connection with such share withholding procedure shall be your sole responsibility.

(c) You may not exercise your Option unless the tax withholding obligations of the Company and/or any affiliate are satisfied. Accordingly, you may not be able to exercise your Option when desired even though your Option is vested, and the Company shall have no obligation to issue a certificate for such shares of Common Stock or release such shares of Common Stock from any escrow provided for herein unless such obligations are satisfied.

13. **TAX CONSEQUENCES.** You hereby agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes your tax liabilities. You shall not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from your option or your other compensation. In particular, you acknowledge that this Option is exempt from Section 409A of the Code only if the exercise price per share specified in the Notice is at least equal to the Fair Market Value per share of the Common Stock on the Date of Grant and there is no other impermissible deferral of compensation associated with the option.

14. **NOTICES.** Any notices provided for in your Option or the Plan shall be given in writing and shall be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company.

15. **GOVERNING PLAN DOCUMENT.** Your Option is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your Option, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. In the event of any conflict between the provisions of your Option and those of the Plan, the provisions of the Plan shall control.

16. **RIGHTS OF OPTIONEE.** This Agreement does not entitle you to any voting rights or, except for the foregoing notice provisions, any other rights as a shareholder of the Company. No dividends are payable or will accrue on your Option or the Shares purchasable under this Agreement until, and except to the extent that, your Option are exercised. Upon the surrender of your Option and payment of the Exercise Price as provided above, the person or entity entitled to receive the shares of the Common Stock issuable upon such exercise shall be treated for all purposes as the record holder of such shares as of the close of business on the date of the surrender of your Option for exercise as provided above. Upon the exercise of your Option, you shall have all of the rights of a shareholder in the Company.

17. **GOVERNING LAW.** This Agreement shall be governed by, construed and enforced in accordance with the laws of the State of Delaware without giving effect to its principles governing conflicts of law.

I hereby make the following certifications and representations with respect to the number of shares of Common Stock of the Company listed above (the "*Shares*"), which are being acquired by me for my own account upon exercise of the Option as set forth above:

I acknowledge that the Shares have not been registered under the Securities Act of 1933, as amended (the "*Securities Act*"), and are deemed to constitute "restricted securities" under Rule 701 and Rule 144 promulgated under the Securities Act. I warrant and represent to the Company that I have no present intention of distributing or selling said Shares, except as permitted under the Securities Act and any applicable state securities laws.

I further acknowledge that all certificates representing any of the Shares subject to the provisions of the Option shall have endorsed thereon appropriate legends reflecting the foregoing limitations, as well as any legends reflecting restrictions pursuant to the Company's Articles of Incorporation, Bylaws and/or applicable securities laws.

Very truly yours,

[Provision for Community Property Jurisdiction]

CONSENT

The undersigned spouse of _____ hereby acknowledges that I have read the foregoing Stock Option Agreement and that I understand its contents. I am aware that the Agreement provides for the repurchase of my spouse's shares of Common Stock under certain circumstances and imposes other restrictions on the Transfer of such Common Stock. I agree that my spouse's interest in the Common Stock is subject to this Agreement and any interest I may have in such Common Stock shall be irrevocably bound by this Agreement and further that the my community property interest, if any, shall be similarly bound by this Agreement.

I am aware that the legal, financial and other matters contained in this Agreement are complex and I am free to seek advice with respect thereto from independent counsel. I have either sought such advice or determined after carefully reviewing this Agreement that I will waive such right.

Date: _____

Witness

Spouse



The Chrysler Building
405 Lexington Avenue, 26th Floor
New York, New York 10174
Telephone: (212) 907-6457
Facsimile: (212) 208-4657

August 16, 2016

The Board of Directors
Icagen, Inc.
4222 Emperor Blvd., Suite 350
Durham, North Carolina 27703

Re: Registration Statement on Form S-8

Gentlemen:

We refer to the Registration Statement on Form S-8 (the "Registration Statement") filed on even date by Icagen, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission with respect to the registration of up to an aggregate of 1,590,770 shares of the Company's common stock, par value \$.001 per share (the "Shares"), to be issued in connection with the Company's 2005 Stock Option Plan and 2015 Stock Incentive Plan (the "Plans").

In connection with rendering this opinion, we have examined or are familiar with the charter documents of the Company, the corporate proceedings with respect to the authorization of the Registration Statement, and such other certificates, instruments and documents as we have considered necessary or appropriate for purposes of this opinion. In such examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, conformity to the original documents of all documents submitted to us as copies and the authenticity of the originals of such latter documents. As to any facts material to our opinion, we have, when relevant facts were not independently established, relied upon the Registration Statement and the aforesaid records, certificates and documents. We have made such examination as we have deemed necessary for the purpose of this opinion. Based upon such examination, it is our opinion, that, the Shares have been duly and validly authorized and when issued against receipt of the consideration therefore in accordance with the provisions of the Plans, will be validly issued, fully paid and non-assessable.

Our opinion is limited to the Delaware General Corporation Law. This opinion is given as of the date hereof and we assume no obligation to advise you of changes that may hereafter be brought to our attention.

We hereby consent to the use of this opinion as an exhibit to the Registration Statement.

Very truly yours,

/s/ Gracin & Marlow, LLP

Gracin & Marlow, LLP

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in this Registration Statement of our report dated April 14, 2016, relating to the consolidated financial statements of Icagen, Inc. appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2015.

/s/ RBSM LLP

New York, NY

August 16, 2016