

IMMUCELL CORP /DE/

Form S-3

November 20, 2018

As filed with the Securities and Exchange Commission on November 20, 2018

**UNITED STATES**

**SECURITIES AND EXCHANGE COMMISSION**

**Washington, D.C. 20549**

**FORM S-3**

**REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933**

**ImmuCell Corporation**

(Exact name of registrant as specified in its charter)

**Delaware**

**01-0382980**

(State or other jurisdiction of  
incorporation or organization) (I.R.S. Employer  
Identification Number)

56 Evergreen Drive

Portland, ME 04103

(207) 878-2770

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Michael F. Brigham

President, Chief Executive Officer and Treasurer

56 Evergreen Drive

Portland, ME 04103

(207) 878-2770

(Name, address, including zip code, and telephone number, including area code, of agent for service)

**Copy to:**

David J. Champoux

Pierce Atwood LLP

254 Commercial Street

Portland, ME 04101

(207) 791-1100

**Approximate date of commencement of proposed sale to the public:** From time to time after this Registration Statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box: R

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Edgar Filing: IMMUCCELL CORP /DE/ - Form S-3

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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 Securities Exchange Act of 1934.

Non-accelerated filer

(Do not check if a smaller reporting company)

Large accelerated filer Accelerated filer

reporting company)

Emerging growth company

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered <sup>(1)</sup>	Aggregate maximum offering price <sup>(2)(3)</sup>	Amount of registration fee
Common Stock Subscription Rights	\$20,000,000	\$ 20,000,000	\$ 2,424

- (1) Pursuant to Rule 416 under the Securities Act of 1933, 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.
- (2) Except as provided in Rule 426(b) under the Securities Act of 1933, in no event will the aggregate offering price of common stock issued by the registrant pursuant to this registration statement exceed \$20,000,000.00.
- (3) The proposed aggregate maximum offering price has been estimated solely to calculate the registration fee in accordance with Rule 457(o) under the Securities Act of 1933.

**The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.**

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any state where the offer or sale is not permitted.

Prospectus Subject To Completion, Dated November 20, 2018

## **IMMUCELL CORPORATION**

**\$20,000,000**

### **Common Stock**

### **Subscription Rights**

From time to time, we may offer up to \$20,000,000.00 of our common stock and subscription rights, in one or more transactions.

We will provide specific terms of these securities and offerings in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement, and any documents incorporated by reference, may also add, update or change information contained in this prospectus. You should read this prospectus, the applicable prospectus supplement, any documents incorporated by reference and any related free writing prospectus carefully before buying any of the securities being offered.

We may offer and sell these securities to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis.

Our common stock is listed on the NASDAQ Capital Market under the symbol "ICCC." The aggregate market value of our outstanding common stock held by non-affiliates was approximately \$35,220,278 based on 5,484,728 shares of outstanding common stock, of which 1,584,365 shares are held by affiliates, and a price of \$9.03 per share, which was the last reported sale price of our common stock as quoted on NASDAQ Capital Market on October 9, 2018. With the

exception of the sale of common stock on December 21, 2017 for proceeds aggregating \$3,049,991, we have not sold any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar month period that ends on, and includes, the date of this prospectus. No subscription rights that we may offer under this prospectus are currently publicly traded.

INVESTING IN OUR SECURITIES INVOLVES RISKS. YOU SHOULD REVIEW CAREFULLY THE RISKS AND UNCERTAINTIES DESCRIBED UNDER THE HEADING "RISK FACTORS" CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT AND ANY RELATED FREE WRITING PROSPECTUS, AND UNDER SIMILAR HEADINGS IN THE OTHER DOCUMENTS THAT ARE INCORPORATED BY REFERENCE INTO THIS PROSPECTUS.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is \_\_\_\_\_, 2018.

**TABLE OF CONTENTS**

<b><u>CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u></b>	<b>1</b>
<b><u>ABOUT THIS PROSPECTUS</u></b>	<b>1</b>
<b><u>ABOUT IMMUCELL CORPORATION</u></b>	<b>2</b>
<b><u>WHERE YOU CAN FIND ADDITIONAL INFORMATION</u></b>	<b>5</b>
<b><u>INCORPORATION OF INFORMATION BY REFERENCE</u></b>	<b>6</b>
<b><u>RISK FACTORS</u></b>	<b>7</b>
<b><u>DESCRIPTION OF COMMON STOCK</u></b>	<b>7</b>
<b><u>DESCRIPTION OF SUBSCRIPTION RIGHTS</u></b>	<b>9</b>
<b><u>USE OF PROCEEDS</u></b>	<b>10</b>
<b><u>PLAN OF DISTRIBUTION</u></b>	<b>10</b>
<b><u>LEGAL MATTERS</u></b>	<b>12</b>
<b><u>EXPERTS</u></b>	<b>12</b>
<b><u>INTERESTS OF NAMED EXPERTS AND COUNSEL</u></b>	<b>12</b>

Table of Contents

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements in this prospectus and in any prospectus supplement we may file constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. These statements relate to future events concerning our business and to our future revenues, operating results and financial condition. In some cases, you can identify forward-looking statements by terminology such as “may,” “will,” “could,” “would,” “should,” “expect,” “plan,” “anticipate,” “aim,” “intend,” “believe,” “estimate,” “target,” “predict,” “project,” “propose,” “potential,” or “continue,” or the negative of those terms or other comparable terminology.

Any forward-looking statements contained in this prospectus or any prospectus supplement are only estimates or predictions of future events based on information currently available to our management and management’s current beliefs about the potential outcome of future events. Whether these future events will occur as management anticipates, whether we will achieve our business objectives, and whether our revenues, operating results or financial condition will be sustained or improve in future periods are subject to numerous risks. There are a number of important factors that could cause actual results to differ materially from the results anticipated by these forward-looking statements. These important factors include those that we discuss under the heading “Risk Factors” and in other sections of our Annual Report on Form 10-K for the year ended December 31, 2017 and our Form 10-Q for the quarterly period ended September 30, 2018, all filed with the Securities and Exchange Commission (“SEC”), as well as in our other reports filed from time to time with the SEC that are incorporated by reference into this prospectus. You should read these factors and the other cautionary statements made in this prospectus and in the documents we incorporate by reference into this prospectus as being applicable to all related forward-looking statements wherever they appear in this prospectus or the documents we incorporate by reference into this prospectus. If one or more of these factors materialize, or if any underlying assumptions prove incorrect, our actual results, performance or achievements may vary materially from any future results, performance or achievements expressed or implied by these forward-looking statements. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

ABOUT THIS PROSPECTUS

This document is called a prospectus and is part of a registration statement that we have filed with the SEC, using a “shelf” registration process. Under this shelf registration process, we may, from time to time, offer and sell any combination of the securities described in this prospectus in one or more transactions and in amounts we will determine from time to time, up to a total dollar amount of \$20,000,000.00.

This prospectus provides you with a general description of ImmuCell Corporation and potential offerings of our securities described herein. Each time we offer securities we will provide a prospectus supplement or information that is incorporated by reference into this prospectus, containing more specific information about the offering. We may



also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. This prospectus, together with applicable prospectus supplements, any information incorporated by reference and any related free writing prospectuses, includes all material information relating to these offerings. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus, including, without limitation, a discussion of any risk factors or other special considerations that apply to these offerings or the specific plan of distribution. If there is any inconsistency between the information in this prospectus and a prospectus supplement or information incorporated by reference having a later date, you should rely on the information in that prospectus supplement or incorporated information having a later date. We urge you to read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the heading “Where You Can Find More Information,” before buying any of our securities.

Table of Contents

You should rely only on the information we have provided or incorporated by reference in this prospectus, any applicable prospectus supplement and any related free writing prospectus. We have not authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus.

Neither the delivery of this prospectus nor any sale made under it implies that there has been no change in our affairs or that the information in this prospectus is correct as of any date after the date of this prospectus. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of common stock.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under “Where You Can Find More Information”. **THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES, UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.**

In this prospectus, unless the context otherwise requires, references to “we”, “us”, “our” or similar terms, as well as references to “ImmuCell” or the “Company”, refer to ImmuCell Corporation.

**ABOUT IMMUCELL CORPORATION**

We are a growing animal health company whose purpose is to create scientifically-proven and practical products that result in a measurable economic impact on animal health and productivity in the dairy and beef industries. We were originally incorporated in Maine in 1982 and reincorporated in Delaware in 1987, in conjunction with our initial public offering of common stock. We have developed products that provide **Immediate Immunity™** to newborn dairy and beef cattle and are in the late stages of developing a new product that addresses mastitis, the most significant cause of economic loss to the dairy industry.

Our total product sales during the year ended December 31, 2017 increased by 9%, or \$887,000, to \$10.4 million from \$9.5 million in 2016, and gross margin as a percentage of product sales was 50% in 2017, as compared to 57% during

2016. Total product sales during the nine-month period ended September 30, 2018 increased by 10%, or \$751,000, to \$8 million from \$7.3 million during the same period in 2017, and gross margin as a percentage of product sales was 47% during the 2018 period, as compared to 55% during 2017. Growth in sales of our lead product, the **First Defense**<sup>®</sup> product line, is driving the increase in our total product sales. Sales of the **First Defense**<sup>®</sup> product line aggregated 94% and 93% of our total product sales during the years ended December 31, 2017 and 2016, respectively. Sales of the **First Defense**<sup>®</sup> product line increased by 11% and 36% during the years ended December 31, 2017 and 2015 and decreased by 7% during the year ended December 31, 2016, respectively, in comparison to the prior years. Sales of the **First Defense**<sup>®</sup> product line aggregated 97% and 94% of our total product sales during the nine-month periods ended September 30, 2018 and 2017, respectively. Sales of the **First Defense**<sup>®</sup> product line increased by 14% during the nine-month period ended September 30, 2018 in comparison to the same period during 2017.

The **First Defense**<sup>®</sup> product line is manufactured from hyperimmune cows' colostrum (the milk that a cow produces immediately after giving birth) utilizing our proprietary vaccine and milk protein purification technologies. The target disease, bovine enteritis (calf scours), causes diarrhea and dehydration in newborn calves and often leads to serious sickness and even death. **First Defense**<sup>®</sup> provides bovine antibodies that newborn calves need but are unable to produce on their own immediately after birth. Our milk antibody products provide **Immediate Immunity**<sup>™</sup> during the first few critical days of life when calves need this protection most. Studies have shown that calves that scour are more susceptible to other diseases later in life and under-perform calves that do not contract scours. The original **First Defense**<sup>®</sup> product in a bivalent capsule form was licensed by the U.S. Department of Agriculture (USDA) with claims against *E. coli* and coronavirus (two leading causes of scours) in 1991. In late 2017, the USDA approved a trivalent version of the product (known as **Tri-Shield First Defense**<sup>®</sup>) with claims against rotavirus as well as *E. coli* and coronavirus. We are rebranding the bivalent versions of our product as **Dual-Force First Defense**<sup>®</sup>, which we continue to market as options for customers who don't perceive rotavirus as a threat to their herds or prefer the bivalent capsule. **Tri-Shield**<sup>®</sup> has also been approved for sale in Canada. We do not plan to introduce **Tri-Shield**<sup>®</sup> to the Canadian market until we have met domestic demand.

Table of Contents

Beginning early in 2015 and extending through the middle of 2016, we experienced order backlog affecting our ability to meet customer demand for **First Defense**<sup>®</sup>, which disrupted our normal product shipping patterns for the first time. In response, we completed investments necessary to increase our liquid processing capacity by 50% during the fourth quarter of 2015 and our freeze drying capacity by 100% during the first quarter of 2016. This expanded production capacity has the potential to produce product with an annual sales value of approximately \$17 million. The actual value of the production output will vary subject to product yields, selling price and product format mix. Since the third quarter of 2016 and through most of 2017, we had sufficient available inventory and were shipping in accordance with the current demand of our distributors. However, during the first quarter of 2018, we incurred a backlog of orders for the second time, as sales demand for **Dual-Force**<sup>™</sup> **First Defense**<sup>®</sup> exceeded available inventory. As of March 31, 2018, we had a backlog of orders for **Dual-Force**<sup>™</sup> worth approximately \$901,000, which we filled during the second quarter of 2018. In order to produce more doses quickly to clear the 2015/2016 order backlog, we had significantly increased the quantity of our supply of colostrum. The 2018 backlog problem was largely caused by a reduction in the biological yield from this new milk supply in addition to other factors. To address the inherent variability in our biological yields, among other process improvements, we are working to optimize the mix of early milk that is rich with antibodies and later milk that contains less antibodies. With the improved production methods to increase yields and the enhanced manufacturing redundancies that we have implemented, we are rebuilding target inventory levels of **Dual-Force**<sup>™</sup> to again consistently supply product to the market.

**Tri-Shield First Defense**<sup>®</sup> is the first calf-level, passive antibody product on the market with USDA-approved disease claims providing **Immediate Immunity**<sup>™</sup> against each of the three leading causes of calf scours (*E. coli*, coronavirus and rotavirus) and is sold in gel tube delivery format. This unique breadth of claims further differentiates our products from competitive products on the market. Of the products given to newborn calves to prevent scours, Calf-Guard<sup>®</sup> from Zoetis is the market leader in terms of doses sold. This product has claims against coronavirus and rotavirus (but not *E. coli*). With the addition of a rotavirus claim for **Tri-Shield**<sup>®</sup>, we now compete more effectively against Calf-Guard<sup>®</sup> and other scours preventatives given to newborn calves. Historically, the primary tool to help combat scours has been to vaccinate the cow with a dam-level scours vaccine to increase the antibody level against specific scours-causing pathogens in the colostrum that she produces for her newborn. With this expanded claim set, we can compete more effectively against these dam-level vaccine products that are given to the mother cow. It is generally believed that only 80% of animals respond to a vaccine, which could leave about 20% of calves unprotected. This variability in a cow's immune response to vaccines (that can impact our costs of goods sold when we immunize our source cows to produce the antibodies used in our production process) creates a sales opportunity for our product. Additionally, our research suggests that treatment protocols for dam-level scours vaccine programs are not always followed, leaving even more calves compromised. Our new marketing campaign, **Beyond Vaccination**<sup>®</sup>, suggests that by delivering immediate immunity directly to the calf via **Tri-Shield**<sup>®</sup>, producers can reduce stress-causing injections to the cow and save the associated labor for vaccines that are more critical to cow health. Reliance on a dam-level scours vaccine requires that money be spent before it is known whether the cow is carrying a viable, valued calf. With **Tri-Shield**<sup>®</sup>, every calf is equally protected and that investment can be targeted to the calves that are most critical to the operation. This, in turn, can free up space in the cow's vaccination schedule to optimize her immune response to vaccines that are critical to her health. We estimate that the total market for scours preventative products (including sales of our product) that are given to newborn calves (the calf-level market) is approximately \$18 million annually. We estimate that the dam-level product category covers approximately twice as many calves as the calf-level product segment reaches.



Table of Contents

Soon after regulatory approval of **Tri-Shield First Defense**<sup>®</sup> was obtained during the fourth quarter of 2017, we quickly sold out of our initial launch quantities. During the first quarter of 2018, market demand for **Tri-Shield**<sup>®</sup> quickly exceeded our available inventory. Production has not kept pace with demand primarily because of the difficulty in producing enough of the new, complex rotavirus vaccine that is used to immunize our source cows at commercial scale. Simply put, the complex vaccine production process used to obtain regulatory approval required significant additional process development work and optimization to meet large-scale production needs. As of March 31, 2018, the backlog of orders for this new product increased to approximately \$344,000. While the backlog of orders was worth approximately \$327,000 as of June 30, 2018 and \$301,000 as of September 30, 2018, we do not think these are meaningful figures because currently we are not actively soliciting all orders possible given the short supply situation and because we believe many distributors are holding off on placing orders until we have the supply situation under better control. While this backlog is a problem and could adversely impact customer relations and result in lost sales, it is also a positive indication that the market is accepting our new product offering. Given this shortage of supply, we have had to change our market launch strategy for **Tri-Shield**<sup>®</sup>. We have pivoted away from a mass-market launch and are working with distribution partners to allocate the limited supply to influential end-users and veterinarians capable of collecting field data that could help us re-launch **Tri-Shield**<sup>®</sup> both in the United States and Canada as soon as production issues are resolved and adequate inventory is on hand, which is anticipated to be during the middle of 2019. Sales of **Tri-Shield**<sup>®</sup> were approximately \$250,000, \$236,000, \$216,000 and \$252,000 during the fourth quarter of 2017, the first quarter of 2018, the second quarter of 2018 and the third quarter of 2018, respectively. We are satisfied that we are successfully addressing the vaccine production and biological yield issues pertaining to the production of this new product. During the fourth quarter of 2018, we expect to be able to produce product with a sales value of approximately \$500,000.

The majority of our product development budget from 2000 through 2018 has been focused on the development of a Nisin-based intramammary treatment of subclinical mastitis in lactating dairy cows. During the 18.75-year period that began on January 1, 2000 (the year we began the development of our mastitis drug) and ended on September 30, 2018, we invested the aggregate of approximately \$36.3 million in the development of this product. This figure includes approximately \$15.1 million of product development expenses (not including depreciation expense related to the production facility and equipment), approximately \$20.8 million of capital expenditures for the production facility and equipment and \$329,000 for land. This estimated allocation of product development expenses reflects only direct expenditures and includes no allocation of product development or administrative overhead expenses. Approximately \$2.9 million of this investment was offset by product licensing revenues and grant income.

It is difficult to estimate the potential size of the market for the treatment of subclinical mastitis because this disease is largely left untreated presently. We believe that approximately 20-30% of the U.S. dairy herd is affected by subclinical mastitis caused by Gram-positive organisms falling within the claim spectrum of our product. This compares to approximately 2% of the U.S. herd that is thought to be infected with clinical mastitis, where approximately \$60 million per year is spent on drug treatments. We believe that similar market opportunities also exist outside of the United States and for the treatment of dry (non-lactating) cows. We estimate that the market potential for first year sales of our new mastitis product could be approximately \$5.8 million and could grow to approximately \$36.1 million during the fifth year after market launch.

During the fourth quarter of 2017, we completed construction of the building that houses our Nisin production facility, and during the third quarter of 2018 we completed equipping that facility, at an aggregate cost of approximately \$20.8 million. This expansion was funded through a combination of net proceeds from common stock issuances totaling \$12.2 million (2016-17), debt financing from TD Bank, N.A. totaling \$6.8 million (2016-18) and cash generated from operations. The production capacity of our facility could meet annual sales demand of approximately \$10 million. This facility was constructed with enough room to add a second fermentation and recovery portion of the product line to be purchased and installed at a cost of approximately \$7 million to effectively double production output. We would consider this investment only after commercial acceptance of the product is demonstrated. If annual sales of our mastitis product exceed approximately \$20 million, we would evaluate all Nisin supply options, factoring in efficiencies and yield improvements. Building an additional Nisin production facility to meet our needs at that time may be the most cost-effective solution.

Table of Contents

Nisin is an antibacterial peptide that has been demonstrated in clinical studies to be an effective aid in the reduction of mastitis-causing organisms in dairy cows. Mastitis is a very common infection in dairy cows that results in inflammation of the mammary gland. Because dairy producers are required to discard milk for a period during and after treatment with all currently marketed mastitis treatment products due to concerns about antibiotic residue in milk, it is generally current practice to only treat mastitis when the disease has progressed to the clinical stage where the milk from an infected cow cannot be sold. We believe that our Nisin-based treatment could revolutionize the way that mastitis is treated by making earlier treatment of subclinically infected cows economically feasible by not requiring a milk discard during, or for a period of time after, treatment. No other FDA-approved mastitis treatment product on the market can offer this value proposition. Commercial introduction of our mastitis product in the United States is subject to approval of our New Animal Drug Application (NADA) by the U.S. Food and Drug Administration's Center for Veterinary Medicine (FDA), which approval cannot be assured. During the third quarter of 2018, the FDA issued to us a Technical Section Complete Letter for the Human Food Safety Technical Section of our NADA for the mastitis product (the fourth of five required Technical Section Complete Letters), leaving only the manufacturing Technical Section (known as the Chemistry, Manufacturing and Controls (CMC) Technical Section) remaining for product approval and launch. We anticipate making the first submission of the CMC Technical Section (Drug Substance only) during the fourth quarter of 2018; it will be subject to a six-month FDA review period. We plan to make a second submission of the CMC Technical Section (which would be responsive to the anticipated Incomplete Letter from the first submission and also include the Drug Product requirements) promptly after the first review by the FDA is complete. This second submission would also be subject to a six-month FDA review period. Adherence to this timeline could set us up for possible product approval during late 2019 or the first half of 2020. Foreign regulatory approvals would be required for sales in key markets outside of the United States, which would involve some similar and some different requirements. We have not yet initiated any such foreign approval efforts.

With a measured approach to expanding our customer-facing staff, it is our objective to double our current level of product sales to approximately \$20 million through both continued growth in sales of the **First Defense**<sup>®</sup> product line (including **Tri-Shield**<sup>®</sup>) and a successful launch of our novel mastitis treatment as soon as possible. As market penetration for both new products is achieved and additional resources are dedicated to sales, marketing and technical services, our longer-term goal is to reach the \$30 million level of product sales as soon as possible during the five-year period after the market launch of our new mastitis product.

Our principal executive offices are located at 56 Evergreen Drive, Portland, ME 04103. Our telephone number is (207) 878-2770. Our website is located at [www.immucell.com](http://www.immucell.com). Information contained on, or that can be accessed through, our website is not part of this prospectus.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act of 1933, as amended ("Securities Act"), with respect to the securities covered by this prospectus. This prospectus, which is a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and



schedules filed therewith. For further information with respect to us and the securities covered by this prospectus, please see the registration statement and the exhibits filed with the registration statement. A copy of the registration statement and the exhibits filed with the registration statement may be inspected without charge at the Public Reference Room maintained by the SEC, located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the Public Reference Room. The SEC also maintains a website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the website is <http://www.sec.gov>.

We are subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and, in accordance therewith, we file periodic reports, proxy statements and other information with the SEC. Such periodic reports, proxy statements and other information are available for inspection and copying at the Public Reference Room and website of the SEC referred to above. We maintain a website at [www.immucell.com](http://www.immucell.com). You may access our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed pursuant to Sections 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Our website and the information contained on that site, or connected to that site, are not incorporated into and are not a part of this prospectus.

Table of Contents

INCORPORATION OF INFORMATION BY REFERENCE

The SEC 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. The information we incorporate by reference is an important part of this prospectus, and certain information that we will later file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below, as well as any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act from the date of the initial registration statement and prior to the effectiveness of this registration statement, and any filings made after the date of this prospectus until we sell all of the securities under this prospectus, except that we do not incorporate any document or portion of a document that was furnished and deemed by the rules of the SEC not to have been filed:

Our Annual Report on Form 10-K for the fiscal year ended December 31, 2017, filed with the SEC on March 29, 2018;

Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2018, June 30, 2018 and September 30, 2018, filed with the SEC on May 14, 2018, August 13, 2018 and November 13, 2018, respectively;

Our Current Reports on Form 8-K filed with the SEC on February 1, 2018, February 8, 2018, May 14, 2018, June 18, 2018, July 10, 2018, July 25, 2018, August 13, 2018, September 26, 2018 and November 13, 2018;

Our definitive proxy statement on Schedule 14A filed on April 30, 2018 for our annual meeting of shareholders held on June 14, 2018;

Our Form 8-A filed with the SEC on March 18, 1987 with respect to our common stock; and

Our Form 8-A filed with the SEC on September 13, 1995, as amended by Form 8-A/A filed with the SEC on July 1, 2008, with respect to our common stock purchase rights.

Additionally, all reports and other documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after (i) the date of the initial registration statement and prior to effectiveness of the registration statement; and (ii) the date of this prospectus and prior to the termination or completion of this offering, shall be deemed to be incorporated by reference in this prospectus and to be part hereof from the date of filing of such reports and other documents. Any information that we subsequently file with the SEC that is incorporated by reference as described above will automatically update and supersede any previous information that is part of this prospectus.

We hereby undertake to provide without charge to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon written or oral request of any such person, a copy of any and all of the information that has been or may be incorporated by reference in this prospectus, other than exhibits to such documents. Requests for such copies should be directed to our Corporate Secretary at 56 Evergreen Drive, Portland, ME 04103. Our telephone number is (207) 878-2770.

Table of Contents

RISK FACTORS

Investing in our securities involves significant risks. You should review carefully the risks and uncertainties described under the heading “Risk Factors” contained in, or incorporated into, the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference herein or therein. Each of the referenced risks and uncertainties could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities. Additional risks not known to us or that we believe are immaterial may also adversely affect our business, operating results and financial condition and the value of an investment in our securities.

DESCRIPTION OF COMMON STOCK

We may offer, from time to time, shares of our common stock under this prospectus at prices and on terms to be determined by market conditions at the time of offering. This prospectus provides you with a general description of our common stock. Each time we offer common stock, we will provide a prospectus supplement that will describe the specific amounts, and prices of the common stock. The prospectus supplement and any related free writing prospectus also may supplement or, as applicable, add, update or change information contained in this prospectus or in documents we have incorporated by reference. The terms of any particular offering, the initial offering price and the net proceeds to us will be contained in the prospectus supplement, information incorporated by reference or free writing prospectus relating to such offering.

The description below of our common stock and provisions of our certificate of incorporation and bylaws are summaries and are qualified by reference to the certificate of incorporation and the bylaws. These documents are filed as exhibits to the registration statement of which this prospectus is a part.

Our authorized capital stock consists of 11,000,000 shares of common stock. As of November 19, 2018 there were approximately 5,485,000 shares of common stock outstanding.

**Common Stock**

The holders of common stock are entitled to receive ratable dividends, if any, as may be declared from time to time by the Board of Directors out of funds legally available for that purpose. In the event of our liquidation, dissolution or winding up, whether voluntary or involuntary, the holders of common stock are entitled to share ratably in all assets

remaining after payment of or provision for liabilities. The common stock has no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and nonassessable, and the shares of common stock to be issued upon the closing of this offering will be fully paid and nonassessable.

The holders of common stock are entitled to one vote per share on all matters to be voted upon by the shareholders. There is no cumulative voting.

### **Effect of Certain Provisions of our Certificate of Incorporation, Bylaws and Common Stock Rights Plan**

Provisions of our certificate of incorporation, our bylaws, our Common Stock Rights Plan or Delaware law may discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares of our common stock. These provisions may also prevent or frustrate attempts by our stockholders to replace or remove our management. These provisions include:

limitations on the removal of directors; advance notice requirements for stockholder proposals and nominations;

the ability of our Board of Directors to alter or repeal our bylaws;

the ability of our Board of Directors to refuse to redeem rights issued under our Common Stock Rights Plan or otherwise to limit or suspend its operation that would work to dilute the stock ownership of a potential hostile acquirer, likely preventing acquisitions that have not been approved by our Board of Directors; and

Section 203 of the Delaware General Corporation Law, which prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder (generally defined as a person which together with its affiliates owns, or within the last three years has owned, 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder) unless the business combination is approved in a prescribed manner.

The existence of the foregoing provisions and anti-takeover measures could depress the trading price of our common stock or limit the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of our Company, thereby reducing the likelihood of obtaining a premium for our common stock in an acquisition.

Table of Contents

These provisions, summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids and to promote stability in our management. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our Board of Directors.

Shareholder Meetings. Our bylaws provide that a special meeting of shareholders may be called only by the President or by the Board of Directors or by shareholders holding a majority of the outstanding shares of our common stock.

Requirements for Advance Notification of Shareholder Nominations and Proposals. Our bylaws establish advance notice procedures with respect to shareholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of our Board of Directors or a committee of the Board of Directors.

Board of Directors Vacancies. Under our bylaws, any vacancy on the Board of Directors, including a vacancy resulting from an enlargement of the Board of Directors, may only be filled by vote of a majority of the remaining directors. Any director may be removed by vote of the holders of a majority of the outstanding shares of our common stock. The limitations on the removal of directors and filling of vacancies would have the effect of making it more difficult for a third party to acquire control of us, or of discouraging a third party from acquiring control of us.

Board of Directors Size. Within the range specified by our bylaws, our Board of Directors determines the size of our Board of Directors and may create new directorships and elect new directors, which may enable an incumbent Board of Directors to maintain control by adding directors.

Indemnification. Our certificate of incorporation and our bylaws, as amended, provide that we will indemnify officers and directors against losses as they incur in investigations and legal proceedings resulting from their services to us, which may include service in connection with takeover defense measures.

In September 1995, our Board of Directors adopted a Common Stock Rights Plan and declared a dividend of one common share purchase right (a "Right") for each of the then outstanding shares of the common stock of the Company. Each Right entitles the registered holder to purchase from the Company one share of common stock at an initial purchase price of \$70.00 per share, subject to adjustment. The description and terms of the Rights are set forth in a Rights Agreement between the Company and American Stock Transfer & Trust Company, LLC, as Rights Agent.

The Rights (as amended) become exercisable and transferable apart from the common stock upon the earlier of i) 10 days following a public announcement that a person or group (Acquiring Person) has, without the prior consent of the Continuing Directors (as such term is defined in the Rights Agreement), acquired beneficial ownership of 20% or more of the outstanding common stock or ii) 10 days following commencement of a tender offer or exchange offer the consummation of which would result in ownership by a person or group of 20% or more of the outstanding common stock (the earlier of such dates being called the Distribution Date).

Upon the Distribution Date, the holder of each Right not owned by the Acquiring Person would be entitled to purchase common stock at a discount to the initial purchase price of \$70.00 per share, effectively equal to one half of the market price of a share of common stock on the date the Acquiring Person becomes an Acquiring Person. If, after the Distribution Date, the Company should consolidate or merge with any other entity and the Company were not the surviving company, or, if the Company were the surviving company, all or part of the Company's common stock were changed or exchanged into the securities of any other entity, or if more than 50% of the Company's assets or earning power were sold, each Right would entitle its holder to purchase, at the Rights' then-current purchase price, a number of shares of the acquiring company's common stock having a market value at that time equal to twice the Right's exercise price.

## Table of Contents

At any time after a person or group becomes an Acquiring Person and prior to the acquisition by such person or group of 50% or more of the outstanding common stock, the Board of Directors of the Company may exchange the Rights (other than Rights owned by such person or group which have become void), in whole or in part, at an exchange ratio of one share of common stock per Right (subject to adjustment). At any time prior to 14 days following the date that any person or group becomes an Acquiring Person (subject to extension by the Board of Directors), the Board of Directors of the Company may redeem the then outstanding Rights in whole, but not in part, at a price of \$0.005 per Right, subject to adjustment.

On June 8, 2005, our Board of Directors voted to authorize an amendment of the Rights Agreement to extend the Final Expiration Date by an additional three years, to September 19, 2008. As of June 30, 2005, we entered into an amendment to the Rights Agreement with the Rights Agent reflecting such extension. On June 6, 2008 our Board of Directors voted to authorize an amendment of the Rights Agreement to extend the Final Expiration Date by an additional three years, to September 19, 2011, and to increase the ownership threshold for determining “Acquiring Person” status from 15% to 18%. As of June 30, 2008, we entered into an amendment to the Rights Agreement with the Rights Agent reflecting such extension and threshold increase. On August 5, 2011, our Board of Directors voted to authorize amendments of the Rights Agreement to extend the Final Expiration Date by an additional three years to September 19, 2014 and to increase the ownership threshold for determining “Acquiring Person” status from 18% to 20%. As of August 9, 2011, we entered into an amendment to the Rights Agreement with the Rights Agent reflecting such extension and threshold increase. On June 10, 2014, our Board of Directors voted to authorize an amendment to the Rights Agreement to extend the final expiration date by an additional three years to September 19, 2017. As of June 16, 2014, we entered into an amendment to the Rights Agreement with the Rights Agent reflecting such extension. As of April 15, 2015, we entered into an amendment to the Rights Agreement with the Rights Agent deleting the provisions requiring that redemptions of the Rights, waivers or consents avoiding “Acquiring Person” status or certain amendments to the Rights Agreement be approved by “Continuing Directors”. On June 15, 2017, our Board of Directors voted to authorize an amendment to the Rights Agreement to extend the final expiration date by an additional five years to September 19, 2022. As of August 10, 2017, we entered into an amendment to the Rights Agreement with the Rights Agent reflecting such extension. No other changes have been made to the terms of the Rights or the Rights Agreement.

Our Board of Directors believes that there is some risk that the potential value of the mastitis product development initiative and the potential value of our broadened **First Defense**<sup>®</sup> product line offerings are not fairly reflected in the market price of our common stock, as it fluctuates from time to time, and that opportunistic buyers could take advantage of that disparity to the detriment of our stockholders. If this were to happen and result in a potential threat through an unsolicited acquisition effort or otherwise, our Board of Directors feels that the Common Stock Rights Plan could enhance stockholder value by providing management with negotiating leverage.

## **Listing**

Our common stock is listed on the NASDAQ Capital Market under the symbol “ICCC”.



## **Transfer Agent and Registrar**

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

## **DESCRIPTION OF SUBSCRIPTION RIGHTS**

We may issue to our shareholders subscription rights to purchase our common stock. The following description sets forth certain general terms and provisions of the subscription rights that we may offer pursuant to this prospectus. The particular terms of the subscription rights and the extent, if any, to which the general terms and provisions may apply to the subscription right so offered will be described in the applicable prospectus supplement.

Subscription rights may be issued independently or together with any other security offered by this prospectus and may or may not be transferable by the shareholder receiving the rights in the rights offering. In connection with any rights offering, we may enter into a standby underwriting agreement with one or more underwriters pursuant to which the underwriter will purchase any securities that remain unsubscribed for upon completion of the rights offering, or offer these securities to other parties who are not our shareholders. A copy of the form of subscription rights certificate will be filed with the SEC each time we issue subscription rights, and you should read that document for provisions that may be important to you. For more information on how you can obtain a copy of any subscription rights certificate, see “Where You Can Find More Information.”

Table of Contents

The applicable prospectus supplement relating to any subscription rights will describe the terms of the offered subscription rights, including, where applicable, the following:

the exercise price for the subscription rights;

the number of subscription rights issued to each shareholder;

the extent to which the subscription rights are transferable;

any other terms of the subscription rights, including terms, procedures and limitations relating to the exchange and exercise of the subscription rights;

the date on which the right to exercise the subscription rights will commence and the date on which the right will expire;

the extent to which the subscription rights include an over-subscription privilege with respect to unsubscribed securities; and

the material terms of any standby underwriting arrangement entered into by us in connection with the subscription rights offering.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, information incorporated by reference or free writing prospectus, we intend to use the net proceeds from the sale of our securities to fund our growth plans, to possibly repay some of our indebtedness, for working capital, and for other general corporate purposes, including capital expenditures related to our growth.

PLAN OF DISTRIBUTION

We may sell the securities offered by this prospectus from time to time in one or more transactions, including, without limitation:

through agents;

to or through underwriters;

through broker-dealers (acting as agent or principal);

directly by us to purchasers (including our affiliates and shareholders), through a specific bidding or auction process, a rights offering or otherwise;

through a combination of any such methods of sale; or

through any other methods described in a prospectus supplement.

The distribution of securities may be effected, from time to time, in one or more transactions, including:

block transactions (which may involve crosses) and transactions on the NASDAQ Capital Market or any other organized market where the common stock may be traded;

purchases by a broker-dealer as principal and resale by the broker-dealer for its own account pursuant to a prospectus supplement;

ordinary brokerage transactions and transactions in which a broker-dealer solicits purchasers;

sales “at the market” to or through a market maker or into an existing trading market, on an exchange or otherwise; and

sales in other ways not involving market makers or established trading markets, including direct sales to purchasers.

Table of Contents

The securities may be sold at a fixed price or prices, which may be changed, or at market prices prevailing at the time of sale, at prices relating to the prevailing market prices or at negotiated prices. The consideration may be cash or another form negotiated by the parties. Agents, underwriters or broker-dealers may be paid compensation for offering and selling the securities. That compensation may be in the form of discounts, concessions or commissions to be received from us or from the purchasers of the securities. Dealers and agents participating in the distribution of the securities may be deemed to be underwriters, and compensation received by them on resale of the securities may be deemed to be underwriting discounts and commissions under the Securities Act. If such dealers or agents were deemed to be underwriters, they may be subject to statutory liabilities under the Securities Act.

We may also make direct sales through subscription rights distributed to our existing shareholders on a pro rata basis, which may or may not be transferable. In any distribution of subscription rights to our shareholders, if all of the underlying common stock is not subscribed for, we may then sell the unsubscribed common stock directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed common stock to third parties. We may pay the standby underwriters a commitment fee for the common stock they commit to purchase on a standby basis.

Agents may, from time to time, solicit offers to purchase the securities. If required, we will name in the applicable prospectus supplement, document incorporated by reference or free writing prospectus, as applicable, any agent involved in the offer or sale of the securities and set forth any compensation payable to the agent. Unless otherwise indicated, any agent will be acting on a best efforts basis for the period of its appointment. Any agent selling the securities covered by this prospectus may be deemed to be an underwriter of the securities.

If underwriters are used in an offering, securities will be acquired by the underwriters for their own account and may be resold, from time to time, in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale, or under delayed delivery contracts or other contractual commitments. Securities may be offered to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. If an underwriter or underwriters are used in the sale of securities, an underwriting agreement will be executed with the underwriter or underwriters at the time an agreement for the sale is reached. The applicable prospectus supplement will set forth the managing underwriter or underwriters, as well as any other underwriter or underwriters, with respect to a particular underwritten offering of securities, and will set forth the terms of the transactions, including compensation of the underwriters and dealers and the public offering price, if applicable. This prospectus, the applicable prospectus supplement and any applicable free writing prospectus will be used by the underwriters to resell the securities.

If a dealer is used in the sale of the securities, we, or an underwriter, will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. To the extent required, we will set forth in the prospectus supplement, document incorporated by reference or free writing prospectus, as applicable, the name of the dealer and the terms of the transactions.

We may directly solicit offers to purchase the securities and may make sales of securities directly to institutional investors or others. These persons may be deemed to be underwriters with respect to any resale of the securities. To the extent required, the prospectus supplement, document incorporated by reference or free writing prospectus, as applicable, will describe the terms of any such sales, including the terms of any bidding or auction process, if used.

Agents, underwriters and dealers may be entitled under agreements which may be entered into with us to indemnification by us against specified liabilities, including liabilities incurred under the Securities Act, or to contribution by us to payments they may be required to make in respect of such liabilities. If required, the prospectus supplement, documents incorporated by reference or free writing prospectus, as applicable, will describe the terms and conditions of such indemnification or contribution. Some of the agents, underwriters or dealers, or their affiliates may be customers of, engage in transactions with or perform services for us or our subsidiaries or affiliates in the ordinary course of business.

Under the securities laws of some states, the securities offered by this prospectus may be sold in those states only through registered or licensed brokers or dealers.

Table of Contents

Any person participating in the distribution of securities registered under the registration statement that includes this prospectus will be subject to applicable provisions of the Exchange Act, and the applicable SEC rules and regulations, including, among others, Regulation M, which may limit the timing of purchases and sales of any of our common stock by any such person. Furthermore, Regulation M may restrict the ability of any person engaged in the distribution of our securities to engage in market-making activities with respect to our securities. These restrictions may affect the marketability of our securities and the ability of any person or entity to engage in market-making activities with respect to our securities.

Certain persons participating in an offering may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act that stabilize, maintain or otherwise affect the price of the securities. If any such activities will occur, they will be described in the applicable prospectus supplement.

In compliance with the guidelines of the Financial Industry Regulatory Authority (“FINRA”), the aggregate maximum discount, commission or agency fees or other items constituting underwriting compensation to be received by any FINRA member or independent broker-dealer will not exceed 8% of any offering pursuant to this prospectus and any applicable prospectus supplement, as the case may be.

If more than 10% of the net proceeds of any offering of securities made under this prospectus will be received by FINRA members participating in the offering or affiliates or associated persons of such FINRA members, the offering will be conducted in accordance with FINRA Conduct Rule 5110(h).

So long as the aggregate market value of our common equity held by non-affiliates is less than \$75,000,000.00 and so long as required by the rules of the SEC, the amount of common stock we may offer hereunder will be limited such that the aggregate market value of securities sold by us during a period of 12 calendar months cannot exceed one-third of the aggregate market value of the common equity held by non-affiliates.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution.

LEGAL MATTERS

Pierce Atwood LLP will pass upon legal matters in connection with the validity of the securities offered hereby for us.

## EXPERTS

The financial statements of ImmuCell Corporation as of and for the years ended December 31, 2017 and 2016, incorporated in this Prospectus and Registration Statement by reference from the ImmuCell Corporation Annual Report on Form 10-K for the year ended December 31, 2017 have been audited by RSM US LLP, an independent registered public accounting firm, as stated in their report, incorporated herein by reference, and have been incorporated in this Prospectus and Registration Statement in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

## INTERESTS OF NAMED EXPERTS AND COUNSEL

No expert or counsel named in this prospectus as having prepared or certified any part of this prospectus or having given an opinion upon the validity of the securities being registered or upon other legal matters in connection with the registration or offering of the securities was employed on a contingency basis, or had, or is to receive, in connection with the offering, a substantial interest, direct or indirect, in the registrant. Nor was any such person connected with the registrant as a promoter, managing or principal underwriter, voting trustee, director, officer, or employee.

Table of Contents**PART II**

## INFORMATION NOT REQUIRED IN PROSPECTUS

## Item 14. Other Expenses of Issuance and Distribution

The estimated expenses payable by the registrant in connection with the issuance and distribution of the securities being registered are as follows:

SEC Registration Fee	\$2,436.00
Legal Fees and Expenses*	\$50,000.00
Accounting Fees and Expenses*	\$50,000.00
Miscellaneous Fees and Expenses*	\$10,000.00
TOTAL	\$112,436.00

\*Estimated solely for the purposes of this Item. Actual expenses will vary.

## Item 15. Indemnification of Directors and Officers

We are incorporated in Delaware and consequently are subject to the Delaware General Corporation Law (the “DGCL”). Section 145 of the DGCL provides a detailed statutory framework covering indemnification of directors and officers who have been or are threatened to be or have been made defendants in legal proceedings by reason of their service as directors or officers. Our bylaws provide, in effect, that we shall indemnify our directors and officers to the maximum extent permitted by Delaware law. Article V, Sections 1 through 9 of our bylaws provide as follows:

“Section 1. Actions other than by or in the Right of the Corporation. The corporation shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that he is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceedings, had no reasonable cause to believe his conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a



plea of NOLO CONTENDERE or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his conduct was unlawful.

Section 2. Actions by or in the Right of the Corporation. The corporation shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in his favor by reason of the fact that he is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorney's fees) actually and reasonably incurred by him in connection with the defense or settlement of such action or suit if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable unless and only to the extent that the Court of Chancery of the State of Delaware or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances for the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery of the State of Delaware or such other court shall deem proper.

Table of Contents

Section 3. Success on the Merits. To the extent that any person described in Section 1 or 2 of this Article V has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in said Sections, or in defense of any claim, issue or matter therein, he shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him in connection therewith.

Section 4. Specific Authorization. Any indemnification under Section 1 or 2 of this Article V (unless ordered by a court) shall be made by the corporation only as authorized in the specific case upon a determination that indemnification of any person described in said Sections is proper in the circumstances because he has met the applicable standard of conduct set forth in said Sections. Such determination shall be made (1) by the Board of Directors by a majority vote of a quorum consisting of directors who were not parties to such action, suit or proceeding, or (2) if such a quorum is not obtainable, or even if obtainable a quorum of disinterested directors so directs, by independent legal counsel in a written opinion, or (3) by the stockholders to the corporation.

Section 5. Advance Payment. Expenses incurred in defending a civil or criminal action, suit or proceeding may be paid by the corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of any person described in said Section to repay such amount if it shall ultimately be determined that he is not entitled to indemnification by the corporation as authorized in this Article V.

Section 6. Non-Exclusivity. The indemnification and advancement of expenses provided by, or granted pursuant to, the other Sections of this Article V shall not be deemed exclusive of any other rights to which those provided indemnification or advancement of expenses may be entitled under any By-law, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding such office.

Section 7. Insurance. The Board of Directors may authorize, by a vote of the majority of the full board, the corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against him and incurred by him in any such capacity, or arising out of his status as such, whether or not the corporation would have the power to indemnify him against such liability under the provisions of this Article V.

Section 8. Continuation of Indemnification and Advancement of Expenses. The indemnification and advancement of expenses provided by, or granted pursuant to, this Article V shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

Section 9. Intent of Article. The intent of this Article V is to provide for indemnification and advancement of expenses to the fullest extent permitted by Section 145 of the General Corporation Law of Delaware. To the extent that such Section or any successor action may be amended or supplemented from time to time, this Article V shall be amended automatically and construed so as to permit indemnification and advancement of expenses to the fullest extent from time to time permitted by law.”

Reference is made to Article Eighth of our certificate of incorporation, which provides as follows:

“EIGHTH. A director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director’s duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the General Corporation Law of Delaware, or (iv) for any transaction from which the director derived an improper personal benefit. In addition to and not in limitation of the foregoing, a director of the corporation shall not be liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director to the fullest extent provided by the General Corporation Law of Delaware as the same may hereafter be amended.”

Table of Contents

Reference is also made to Section 145 of the DGCL, which provides as follows:

“(a) A corporation shall have power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person’s conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of NOLO CONTENDERE or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that the person’s conduct was unlawful.

(b) A corporation shall have power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation, as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys’ fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

(c) To the extent that a present or former director or officer of a corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in subsections (a) and (b) of this section, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys’ fees) actually and reasonably incurred by such person in connection therewith.

(d) Any indemnification under subsections (a) and (b) of this section (unless ordered by a court) shall be made by the corporation only as authorized in the specific case upon a determination that indemnification of the director, officer, employee or agent is proper in the circumstances because the person has met the applicable standard of conduct set forth in subsections (a) and (b) of this section. Such determination shall be made with respect to a person who is a director or officer at the time of such determination (1) by a majority vote of the directors who are not parties to such

action, suit or proceeding, even though less than a quorum, or (2) by a committee of such directors designated by majority vote of such directors, even though less than a quorum, or (3) if there are no such directors, or if such directors so direct, by independent legal counsel in a written opinion, or (4) by the stockholders.

(e) Expenses (including attorneys' fees) incurred by an officer or director in defending any civil, administrative or investigative action, suit or proceeding, may be paid by the corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such amount if it shall ultimately be determined that such person is not entitled to be indemnified by the corporation as authorized in this section. Such expenses (including attorneys' fees) incurred by former directors and officers or other employees and agents may be so paid upon such terms and conditions, if any, as the corporation deems appropriate.

(f) The indemnification and advancement of expenses provided by, or granted pursuant to, the other subsections of this section shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office.

(g) A corporation shall have power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify him against such liability under this section.

Table of Contents

(h) For purposes of this section, references to “the corporation” shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under this section with respect to the resulting or surviving corporation as such person would have with respect to such constituent corporation if its separate existence had continued.

(i) For purposes of this section, references to “other enterprises” shall include employee benefit plans; references to “fines” shall include any excise taxes assessed on a person with respect to any employee benefit plans; and references to “serving at the request of the corporation” shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner “not opposed to the best interests of the corporation” as referred to in this section.

(j) The indemnification and advancement of expenses provided by, or granted pursuant to, this section shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

(k) The Court of Chancery is hereby vested with exclusive jurisdiction to hear and determine all actions for advancement of expenses or indemnification brought under this section or under any bylaw, agreement, vote of stockholders or disinterested directors, or otherwise. The Court of Chancery may summarily determine a corporation’s obligation to advance expenses (including attorneys’ fees).”

As permitted by the bylaws, we also presently maintain a policy of directors’ and officers’ liability insurance.

We have also entered into an indemnification agreement (the “Indemnification Agreement”) with each of our directors and executive officers which is intended to complement the indemnity and protection available under our certificate of incorporation and bylaws and the directors’ and officers’ liability insurance policy maintained by us, and to provide for indemnification of directors and officers to the fullest extent permitted by applicable law.

While our bylaws provide, in effect, that we shall indemnify directors and officers to the maximum extent permitted by Delaware law, the Indemnification Agreement provides a number of procedures, presumptions and remedies used

in the determination of the right of the director or officer to indemnification. These procedures, presumptions and remedies substantially broaden the indemnity rights of directors and officers beyond those expressly contained in the bylaws and in Section 145 of the DGCL.

The Indemnification Agreement provides that we will pay certain expenses incurred by a director or officer in connection with any threatened, pending or completed action, suit, arbitration or proceeding, whether civil, criminal, administrative, or investigative, and specifically including actions by or in our name (“derivative suits”), where the individual’s involvement is by reason of the fact that he or she is or was a director or officer. Such amounts include attorneys’ fees and other expenses customarily incurred in connection with legal proceedings and, in the case of proceedings other than derivative suits, judgments, fines and amounts paid in settlement. Indemnification would be available for actions, suits, arbitrations or proceedings commenced after the effective date of the Indemnification Agreement. A director or officer will not receive indemnification if the director or officer is found not to have acted in good faith and in a manner he reasonably believed to be in or not opposed to our best interests.

The Indemnification Agreement further provides that if an action against an indemnified party is dismissed, with or without prejudice, the defense is deemed to have been successful and indemnification is required to be made. The Indemnification Agreement also provides that litigation expenses must be advanced within twenty days of any request, against an undertaking to repay if the payee is ultimately determined not be entitled to indemnification. A determination of entitlement must be made within sixty days of an indemnification request, and payment is to be made within ten days after a favorable determination. (Otherwise a determination in favor of the indemnified party is deemed to have been made.) If there is a change in control of the Company (as defined in the Indemnification Agreement), the indemnified party is presumed to be entitled to indemnification (although the Company may overcome this presumption), and the indemnified party may require that independent counsel (as defined in the Indemnification Agreement) make the determination of entitlement and may choose such counsel, subject to objection by us on limited grounds specified in the Indemnification Agreement. If a determination of entitlement is made, we are bound, but if the indemnified party is denied indemnification pursuant to the terms of the Indemnification Agreement, he or she is entitled to seek a de novo determination from a court. The indemnified party is entitled to enforce the Indemnification Agreement in court and we are precluded from challenging the validity of the procedures and presumptions contained in the Indemnification Agreement.

Table of Contents

## Item 16. Exhibits

<b>Exhibit Number</b>	<b>Exhibit Description</b>
1.1*	Form of Underwriting Agreement.
3.1	Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 of the Company's 1987 Registration Statement No. 33-12722 on Form S-1 as filed with the SEC).
3.2	<u>Certificate of Amendment to the Company's Certificate of Incorporation effective July 23, 1990 (incorporated by reference to Exhibit 3.2 of the Company's Annual Report on Form 10-K for the year ended December 31, 2008).</u>
3.3	<u>Certificate of Amendment to the Company's Certificate of Incorporation effective August 24, 1992 (incorporated by reference to Exhibit 3.3 of the Company's Annual Report on Form 10-K for the year ended December 31, 2008).</u>
3.4	<u>Certificate of Amendment to the Company's Certificate of Incorporation effective June 18, 2018 (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed on June 18, 2018).</u>
3.5	<u>Bylaws of the Company as amended (incorporated by reference to Exhibit 3.4 of the Company's Annual Report on Form 10-K for the year ended December 31, 2008).</u>
4.1	<u>Rights Agreement dated as of September 5, 1995, between the Company and American Stock Transfer and Trust Co., as Rights Agent, which includes as Exhibit A thereto the form of Right Certificate and as Exhibit B thereto the Summary of Rights to Purchase Common Stock (incorporated by reference to Exhibit 4.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2009).</u>
4.1A	<u>First Amendment to Rights Agreement dated as of June 30, 2005 (incorporated by reference to Exhibit 4.1A of the Company's Current Report on Form 8-K filed on July 5, 2005).</u>
4.1B	<u>Second Amendment to Rights Agreement dated as of June 30, 2008 (incorporated by reference to Exhibit 4.1A of the Company's Annual Report on Form 10-K for the year ended December 31, 2008).</u>
4.1C	<u>Third Amendment to Rights Agreement dated as of August 9, 2011 (incorporated by reference to Exhibit 4.1 of the Company's Quarterly Report on Form 10-Q for the three-month period ended June 30, 2011).</u>
4.1D	<u>Fourth Amendment to Rights Agreement dated as of June 16, 2014 (incorporated by reference to Exhibit 4.1D of the Company's Current Report on Form 8-K filed on June 17, 2014).</u>
4.1E	<u>Amendment to Rights Agreement dated as of April 15, 2015 (incorporated by reference to Exhibit 4.1 of the Company's Quarterly Report on Form 10-Q for the three-month period ended March 31, 2015).</u>
4.1F	<u>Amendment to Rights Agreement dated as of August 10, 2017 (incorporated by reference to Exhibit 4.1 of the Company's Quarterly Report on Form 10-Q for the three-month period ended June 30, 2017).</u>
4.2*	Form of Specimen Common Stock Certificate.
4.3*	Form of Subscription Rights Certificate.
5.1	<u>Opinion of Pierce Atwood LLP.</u>
23.1	<u>Consent of Pierce Atwood LLP (included in Exhibit 5.1).</u>
23.2	<u>Consent of RSM US LLP.</u>
24.1	<u>Power of Attorney (See signature page).</u>

\* To be filed by an amendment or as an exhibit to a document filed under the Securities Exchange Act, and incorporated by reference herein.



II-5

Table of Contents

Item 17. Undertakings

(a) 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.

(ii) To reflect in the prospectus any facts or events arising after the effective date of the 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 the Registration Statement.

Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

Provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) above do not apply if the registration statement is on Form S-3 or Form F-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the 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 which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) If the registrant is relying on Rule 430B:

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness.

Table of Contents

Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities.

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes 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.

(c) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933 shall be deemed to be part of this registration statement as of the time it was declared effective.

(d) The undersigned registrant hereby undertakes that, for the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus 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.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions described in Item 15 above, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.

Table of Contents

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Portland, State of Maine on November 20, 2018.

**IMMUCELL CORPORATION**

By: /s/ Michael F. Brigham  
Michael F. Brigham  
President, Chief Executive Officer and Treasurer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Michael F. Brigham his true and lawful attorney-in-fact and agent with full power of substitution, for him/her and in his/her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act of 1933, as amended, and all post-effective amendments thereto, and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, 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 to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

Dated: November 19, 2018 By: /s/ Michael F. Brigham  
Michael F. Brigham  
President, Chief Executive Officer, Treasurer and Director  
(Principal Executive Officer and Principal Financial and Accounting Officer)

Dated: November 19, 2018 By: /s/ Bobbi Jo Brockmann

Edgar Filing: IMMUCCELL CORP /DE/ - Form S-3

Bobbi Jo Brockmann, Vice President of Sales and Marketing and Director

Dated: November 19, 2018 By: /s/ David S. Cunningham  
David S. Cunningham, Director

Dated: November 19, 2018 By: /s/ Steven T. Rosgen  
Steven T. Rosgen, Director

Dated: November 19, 2018 By: /s/ Jonathan E. Rothschild  
Jonathan E. Rothschild, Director

Dated: November 19, 2018 By: /s/ David S. Tomsche  
David S. Tomsche, Director

Dated: November 19, 2018 By: /s/ Paul R. Wainman  
Paul R. Wainman, Director

II-8

Table of Contents

**ImmuCell Corporation**

**EXHIBIT INDEX**

Exhibit 5.1 Opinion of Pierce Atwood LLP

Exhibit 23.1 Consent of Pierce Atwood LLP (included in Exhibit 5.1)

Exhibit 23.2 Consent of RSM US LLP

II-9