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

FORM S-3 REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ACASTI PHARMA INC.

(Exact name of registrant as specified in its charter)

Quebéc, Canada (State or other jurisdiction of incorporation or organization) 98-1359336 (I.R.S. Employer Identification Number)

Acasti Pharma Inc. 2572 boul. Daniel-Johnson, 2nd Floor Laval, Québec, Canada H7T 2R3 (450) 686-4555

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

Brian Ford Interim Chief Financial Officer 2572 boul. Daniel-Johnson, 2nd Floor Laval, Québec, Canada (450) 686-4555

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

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

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.

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.

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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

| Large accelerated filer | Accelerated filer | |
|-------------------------|---------------------------|---|
| Non-accelerated filer | Smaller reporting company | X |
| Emerging growth company | | |

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. \Box

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, as amended, 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 contained in this preliminary prospectus is not complete and may be changed. The selling shareholders listed herein may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED OCTOBER 6, 2023

PRELIMINARY PROSPECTUS

acasti

6,594,615 Common Shares

The selling shareholders (the "Selling Shareholders") named in this prospectus may use this prospectus to offer and resell from time to time up to 6,594,615 of our common shares, no par value per share, which are comprised of (i) 1,951,371 common shares (the "Shares"), (ii) 2,106,853 common shares (the "Pre-Funded Warrant Shares") issuable upon the exercise of pre-funded warrants (the "Pre-Funded Warrants"), and (iii) 2,536,391 common shares (the "Common Warrant Shares" and together with the Pre-Funded Warrant Shares") issuable upon the exercise of common warrants ("Common Warrants" and together with the Pre-Funded Warrants"), each issued in a private placement that closed on September 25, 2023 (the "Private Placement Offering"), pursuant to that certain Securities Purchase Agreement by and between us and the Selling Shareholders, dated as of September 24, 2023 (the "Securities Purchase Agreement").

The Shares and the Warrants were issued to the Selling Shareholders in reliance upon the exemption from the registration requirements in Section 4(a)(2) of the Securities Act of 1933, as amended (the "**Securities Act**"), and Rule 506 of Regulation D promulgated thereunder. We are registering the offer and resale of the Shares and Warrant Shares to satisfy the provisions of the Securities Purchase Agreement pursuant to which we agreed to register the resale of the Shares and the Warrant Shares.

We are not selling any of our common shares under this prospectus and will not receive any of the proceeds from the sale of the Shares and Warrant Shares by the Selling Shareholders. We will, however, receive the net proceeds of any Warrants exercised for cash.

The Selling Shareholders may sell or otherwise dispose of our common shares covered by this prospectus in a number of different ways and at varying prices. We provide more information about how the Selling Shareholders may sell or otherwise dispose of our common shares covered by this prospectus in the section entitled "Plan of Distribution" on page 13. Discounts, concessions, commissions and similar selling expenses attributable to the sale of our common shares covered by this prospectus will be borne by the Selling Shareholders. We will pay all expenses (other than discounts, concessions, commissions and similar selling expenses) relating to the registration of our common shares with the Securities and Exchange Commission (the "SEC").

Our common shares are traded on The Nasdaq Capital Market under the symbol "ACST." On October 5, 2023, the last reported sale price of our common shares on The Nasdaq Capital Market was \$2.58 per share.

Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page 6 of this prospectus and under similar headings in the documents incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed on the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2

, 2023

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ABOUT THIS PROSPECTUS

This prospectus relates to the resale by the Selling Shareholders identified in this prospectus under the caption "Selling Shareholders," from time to time, of up to an aggregate of 6,594,615 of our common shares. We are not selling any of our common shares under this prospectus, and we will not receive any proceeds from the sale of our common shares offered hereby by the Selling Shareholders, although we will receive the net proceeds of any Warrants exercised for cash.

You should rely only on the information contained in this prospectus. We have not, and the Selling Shareholders have not, authorized anyone to provide you with information other than the information that has been provided or incorporated by reference in this prospectus and your reliance on any unauthorized information or representation is at your own risk. This prospectus may be used only in jurisdictions where offers and sales of these securities are permitted. You should assume that the information appearing in this prospectus is accurate only as of the date of this prospectus and that any information 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, or any sale of our securities. Our business, financial condition and results of operations may have changed since those dates.

The information appearing in this prospectus, the documents incorporated by reference in this prospectus and any free writing prospectus authorized for use in connection with this offering is accurate only as of its respective date, regardless of the time of delivery of the respective document or of any sale of securities covered by this prospectus. You should not assume that the information contained in or incorporated by reference in this prospectus, or in any free writing prospectus that authorized for use in connection with this offering, is accurate as of any date other than the respective dates thereof.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference filed with the SEC before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in a document incorporated by reference is inconsistent with a statement in another document incorporated by reference having a later date, the statement in the document having the later date modifies or supersedes the earlier statement.

Neither we nor the Selling Shareholders have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons who come into possession of this prospectus and any free writing prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus and any free writing prospectus applicable to that jurisdiction.

Industry and Market Data

This prospectus and the documents incorporated by reference include statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that these industry publications and third-party research, surveys and studies are reliable, we have not independently verified such data and we do not make any representation as to the accuracy of the information.

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PROSPECTUS SUMMARY

This summary highlights information contained in greater detail elsewhere in this prospectus. This summary is not complete and does not contain all of the information you should consider in making your investment decision. You should read the entire prospectus carefully before making an investment in our securities. You should carefully consider, among other things, our financial statements and the related notes and the sections entitled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in, or incorporated by reference into, this prospectus.

When we refer to Acasti Pharma Inc., and its subsidiaries, we use the terms "Acasti," "the Company," "us," "we" and "our."

Overview

We are focused on developing and commercializing products for rare and orphan diseases that have the potential to improve clinical outcomes by using our novel drug delivery technologies. We seek to apply new proprietary formulations to approved and marketed pharmaceutical compounds to achieve enhanced efficacy, faster onset of action, reduced side effects, more convenient drug delivery and increased patient compliance; all of which could result in improved patient outcomes. The active pharmaceutical ingredients used in the drug candidates under development by us may be already approved in a target indication or could be repurposed for use in new indications.

The existing well understood efficacy and safety profiles of these marketed compounds provides the opportunity for us to utilize the Section 505(b)(2) regulatory pathway under the Federal Food, Drug and Cosmetic Act for the development of our reformulated versions of these drugs, and therefore may provide a potentially shorter path to regulatory approval. Under Section 505(b)(2), if sufficient support of a product's safety and efficacy either through previous U.S. Food and Drug Administration ("**FDA**") experience or sufficiently within the existing and accepted scientific literature, can be established, it may eliminate the need to conduct some of the pre-clinical studies and clinical trials that new drug candidates might otherwise require.

Our therapeutic pipeline consists of three unique clinical stage and multiple pre-clinical stage assets supported by an intellectual property portfolio of more than 40 granted and pending patents in various jurisdictions worldwide. These drug candidates aim to improve clinical outcomes in the treatment of rare and orphan diseases by applying proprietary formulation and drug delivery technologies to existing pharmaceutical compounds to achieve improvements over the current standard of care, or to provide treatment for diseases with no currently approved therapies.

We believe that rare disorders represent an attractive area for drug development, and there remains an opportunity for us to utilize already approved drugs that have established safety profiles and clinical experience to potentially address significant unmet medical needs. A key advantage of pursuing therapies for rare disorders is the potential to receive orphan drug designation ("**ODD**") from the FDA. Our three drug candidates currently in clinical development (or currently deferred, as described below) have received ODD status, provided certain conditions are met at new drug application ("**NDA**") approval. ODD provides for seven years of marketing exclusivity in the United States post-launch, provided certain conditions are met, and the potential for faster regulatory review. ODD status can also result in tax credits of up to 50% of clinical development costs conducted in the United States upon marketing approval and a waiver of the NDA fees, which we estimate can translate into savings of approximately \$3.2 million for our lead drug candidate, GTX-104. Developing drugs for rare diseases can often allow for clinical trials that are more manageably scaled and may require a smaller, more targeted commercial infrastructure.

The specific diseases targeted for drug development by us are well understood, although the patient populations suffering from such diseases may remain poorly served by available therapies or in some cases, approved therapies do not yet exist. We aim to effectively treat debilitating symptoms that result from these underlying diseases.

Our lead drug candidate:

•GTX-104 is a clinical stage, novel, injectable formulation of nimodipine being developed for intravenous infusion (IV) in aneurysmal subarachnoid hemorrhage (aSAH) patients to address significant unmet medical needs. The unique nanoparticle technology of GTX-104 facilitates aqueous formulation of insoluble nimodipine for a standard peripheral IV infusion. GTX-104 provides a convenient IV delivery of nimodipine in the Intensive Care Unit eliminating the need for nasogastric tube administration in unconscious or dysphagic patients. Intravenous delivery of GTX-104 also has the potential to lower food effects, drug-to-drug interactions, and eliminate potential dosing errors. Further, GTX-104 has the potential to better manage hypotension in aSAH patients. GTX-104 has been administered in over 150 healthy volunteers and was well tolerated with significantly lower inter- and intra-subject pharmacokinetic variability compared to oral nimodipine. The pivotal PK bridging study was successfully completed in May 2022.

Other pipeline drug candidates:

•GTX-102, an oral-mucosal betamethasone spray for the treatment of Ataxia Telangiectasia ("A-T"), a complex orphan pediatric genetic neurodegenerative disorder usually diagnosed in young children, for which no FDA approved treatment currently exists.

•GTX-101, a topical bioadhesive film-forming bupivacaine spray for Postherpetic Neuralgia ("PHN"), which can be persistent and often causes debilitating pain following infection by the shingles virus. We believe that GTX-101 could be administered to patients with PHN to treat pain associated with the disease.

In May 2023, we announced the strategic decision to prioritize development of GTX-104 with a goal to advance the product candidate to commercialization, while conserving resources as much as possible to complete development efficiently. Accordingly, we have elected to defer further clinical development of GTX-102 and GTX-101. We estimate that the deferral of GTX-102 and GTX-101 clinical development could be approximately three years given the timeline to complete the development and potential commercial launch of GTX-104. Further development of GTX-102 and GTX-101 will occur at such time as we obtain additional funding or enter into strategic partnerships for license or sale with third parties.

Our management team possesses significant experience in drug formulation and drug delivery research and development, clinical and pharmaceutical development and manufacturing, regulatory affairs, and business development, as well as being well-versed in late-stage drug development and commercialization. Importantly, our team is comprised of industry professionals with deep expertise and knowledge, including a world-renowned practicing neurosurgeon-scientist and respected authority in aSAH, as well as product development, chemistry, manufacturing and controls ("CMC"), planning, implementation, management, and execution of global Phase 2 and Phase 3 trials for a drug candidate for aSAH.

Recent Developments

September 2023 Private Placement Offering

On September 24, 2023, we entered into the Securities Purchase Agreement with the Selling Shareholder named herein in connection with the Private Placement Offering of our securities.

Pursuant to the Securities Purchase Agreement, we agreed to offer and sell the Shares, at a purchase price of \$1.848 per Share and the Pre-Funded Warrants at a purchase price equal to the purchase price per Share less \$0.0001. Each Pre-Funded Warrant is exercisable for one Pre-Funded Warrant Share at an exercise price of \$0.0001 per Pre-Funded Warrant Share, are immediately exercisable and will expire once exercised in full. Pursuant to the Securities Purchase Agreement, we also issued to such Selling Shareholders the Common Warrant sexercisable for the Common Warrant Shares. Under the terms of the Securities Purchase Agreement, for each Common Share and each Pre-Funded Warrant issued in the Private Placement Offering, an accompanying five-eighths (0.625) of a Common Warrant was issued to the purchaser thereof. Each whole Common Warrant is exercisable for one Common Warrant Share at an exercise price of \$3.003 per Common Warrant Share, are immediately exercisable and will expire on the earlier of (i) the 60th day after the date of the acceptance by the U.S. Food and Drug Administration of a New Drug Application for the Company's product candidate GTX-104 or (ii) five years from the date of issuance. The Common Warrants were offered and sold at a purchase price of \$0.125 per whole underlying Common Warrant Share, which purchase price was included in the offering price per Common Share and Pre-Funded Warrant sisued in the Private Placement Offering.

Under the terms of the Warrants, a Selling Shareholder may not exercise Warrants held by such Selling Shareholder to the extent such exercise would cause such Selling Shareholder, together with its affiliates and attribution parties, to beneficially own a number of our common shares which would exceed 4.99% (or, at a Selling Shareholder's election, 9.99% or up to 19.99% as described below), of our then outstanding common shares following such exercise, excluding for purposes of such determination common shares issuable upon exercise of such Warrants which have not been exercised, provided, however, such Selling Shareholder may increase or decrease such percentage to any other percentage not in excess of 19.99%, provided that any increase in such percentage shall not be effective until 61 days after such notice is delivered to us.

Shore Pharma LLC, an entity controlled by Vimal Kavuru, the Chair of our board of directors, and SS Pharma LLC, the beneficial owner of 5.5% of our common shares prior to the Private Placement Offering, each a related party of ours, participated in the Private Placement Offering.

The net proceeds to us from the Private Placement Offering was approximately \$7.3 million, after deducting fees and expenses. The Common Shares, the Warrants, and the Warrant Shares were not registered under the Securities Act.

Pursuant to the terms of the Securities Purchase Agreement, we agreed to register for resale the Common Shares and the Warrant Shares. We are required to use our best efforts to cause the registration statement covering the securities described above to be declared effective as promptly as possible after the filing thereof, but in any event no later the 60th calendar day following the date of the Securities

Purchase Agreement. Failure by us to meet the filing deadlines and other requirements set forth in the Securities Purchase Agreement may subject us to certain liquidated damages.

The Private Placement Offering closed on September 25, 2023.

Risks Associated with Our Business

Our business is subject to a number of risks of which you should be aware before making an investment decision. These risks are discussed more fully in the "Risk Factors" section of this prospectus immediately following this prospectus summary and in Part I, Item 1A "Risk Factors" of our Annual Report on Form 10-K filed with the SEC on June 23, 2023 and our other SEC filings, which are incorporated by reference in this prospectus. These risks include, but are not limited to, the following:

•We are dependent on the success of our lead drug candidate, GTX-104.

•Clinical development is a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results. Failure can occur at any stage of clinical development.

•We are subject to uncertainty relating to healthcare reform measures and reimbursement policies which, if not favorable to our drug candidates, could hinder or prevent our drug candidates' commercial success.

• If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our drug products, if approved, we may be unable to generate any revenue.

• If we are unable to differentiate our drug products from branded reference drugs or existing generic therapies for similar treatments, or if the FDA or other applicable regulatory authorities approve products that compete with any of our drug products, our ability to successfully commercialize our drug products would be adversely affected.

•Our success depends in part upon our ability to protect our intellectual property for our drug candidates.

•Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

•We do not have internal manufacturing capabilities, and if we fail to develop and maintain supply relationships with various third-party manufacturers, we may be unable to develop or commercialize our drug candidates.

•The design, development, manufacture, supply, and distribution of our drug candidates are highly regulated and technically complex.

Corporate Information

We were incorporated on February 1, 2002 under Part 1A of the *Companies Act*(Québec) under the name "9113-0310 Québec Inc." On February 14, 2011, the *Business Corporations Act* (Québec), or QBCA, came into effect and replaced the *Companies Act* (Québec). We are now governed by the QBCA. On August 7, 2008, pursuant to a Certificate of Amendment, we changed our name to "Acasti Pharma Inc." We became a reporting issuer in the Province of Québec on November 17, 2008. On August 27, 2021, Acasti completed its acquisition of Grace Therapeutics Inc. via a merger. Following completion of the merger, Grace Therapeutics Inc. became our wholly owned subsidiary and was renamed Acasti Pharma U.S. Inc.

Our principal executive offices are located at 2572 boul. Daniel-Johnson, 2nd Floor, Laval, Québec, Canada H7E 2R3, and our telephone number is (450)-686-4555. Our website address is www.acasti.com. We do not incorporate the information on, or accessible through, our website into this prospectus, and you should not consider any information on, or accessible through, our website as part of this prospectus.

THE OFFERING

| Common shares to be offered by the Selling Shareholders | Up to 6,594,615 common shares. |
|---|--|
| Common shares outstanding prior to this offering | 7,448,033 common shares |
| Common shares to be outstanding after this offering | er 14,042,648 common shares |
| Use of proceeds | We will not receive any proceeds from the sale of our common shares offered hereby by the Selling Shareholders, although we will receive the net proceeds of any Warrants exercised for cash. |
| Risk Factors | An investment in our securities involves a high degree of risk. See "Risk Factors" beginning on page 6 of this prospectus and the similarly titled sections in the documents incorporated by reference into this prospectus. |
| Nasdaq Capital Market symbol | Our common shares are listed on The Nasdaq Capital Market under the symbol "ACST." We do not intend to apply for listing of the Warrants on any securities exchange or nationally recognized trading system. |

Outstanding Shares

The number of our common shares to be outstanding after this offering is based on 7,448,033 common shares outstanding as of September 24, 2023, plus 1,951,371 Shares and 4,643,244 Warrant Shares issued in the Private Placement Offering, and excludes:

•561,365 common shares issuable upon the exercise of stock options outstanding as of October 5, 2023 at a weighted-average exercise price of \$4.14 per share; and •921,775 common shares available for future issuance under our Stock Option Plan and Equity Incentive Plan as of October 5, 2023.

Share Consolidation Summary Data

On July 4, 2023, we filed Articles of Amendment to our Articles of Incorporation, as amended, with the *Registraire des entreprises du Québec* to implement a 1-for-6 reverse stock split of our then-outstanding common shares (the "Share Consolidation"). Our common shares began trading on the Nasdaq on a consolidated basis on July 10, 2023. The summary data in the following table presents a reconciliation of data derived from the consolidated financial statements for the years ended March 31, 2023 and 2022 as revised to reflect the impact of the Share Consolidation.

| | Year ended March 31, 2023 | Year ended March 31, 2022 |
|---|------------------------------|------------------------------|
| As Originally filed | | |
| Basic and diluted loss per share (\$) | \$ (0.95) | \$ (0.27) |
| Weighted average number of common shares, basic and diluted (#) | 44,612,831 | 36,841,762 |
| Common Shares | 44,612,831 | 44,288,183 |
| Stock Options | 4,445,492 | 2,989,381 |
| Stock Options strike price | \$ 2.27 | \$ 2.98 |
| May 2018 Canadian public offering warrants | 824,218 | 824,218 |
| May 2018 Canadian public offering warrants strike price | \$ 10.48 | \$ 10.48 |
| December 2017 U.S. public offering warrants | - | 884,120 |
| December 2017 U.S. public offering warrants strike price | \$ - | \$ 10.08 |
| December 2017 US public offering broker warrants | - | 32,390 |
| December 2017 US public offering broker warrants strike price | \$ - | \$ 10.10 |

| As Revised With Impact of Share Consolidation | | |
|---|--------------|--------------|
| Basic and diluted loss per share (\$) | \$ (5.70) | \$ (1.62) |
| Weighted average number of common shares, basic and diluted (#) | 7,435,472 | 6,140,294 |
| Common Shares | 7,435,533 | 7,381,425 |
| Stock Options | 740,957 | 498,231 |
| Stock Options strike price | \$ 13.60 | \$ 17.88 |
| May 2018 Canadian public offering warrants | 137,370 | 137,370 |
| May 2018 Canadian public offering warrants strike price | \$ 62.88 | \$ 62.88 |
| December 2017 U.S. public offering warrants | - | 147,354 |
| December 2017 U.S. public offering warrants strike price | \$ - | \$ 60.48 |
| December 2017 US public offering broker warrants | - | 5,399 |
| December 2017 US public offering broker warrants strike price | \$ - | \$ 60.60 |

RISK FACTORS

An investment in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should carefully consider the risks discussed under the section captioned "Risk Factors" contained in our Annual Report on Form 10-K for the fiscal year ended March 31, 2023 and other documents that we file with the SEC, which are incorporated by reference in this prospectus, together with the information included in this prospectus and documents incorporated by reference herein, and in any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be harmed. In such case, the trading price of our common shares could decline, and our shareholders may lose all or part of their investment in the shares of our common shares. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference contain forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, included in this prospectus or the documents incorporated herein by reference regarding our strategy, future operations, future product research or development, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words "anticipate," "believe," "goals," "estimate," "expect," "intend," "may," "might," "plan," "predict," "project," "target," "potential," "would," "could," "should," "continue" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this prospectus and the documents incorporated by reference include, among other things, statements about:

•our clinical trials, including expected costs, goals, timing and other expectations related thereto;

•our ability to build a premier, late-stage specialty pharmaceutical company focused in rare and orphan disease and, on developing and commercializing products that improve clinical outcomes using our novel drug delivery technologies;

•our ability to apply new proprietary formulations to existing pharmaceutical compounds to achieve enhanced efficacy, faster onset of action, reduced side effects, and more convenient drug delivery that can result in increased patient compliance;

•the potential for our drug candidates to receive orphan drug designation from the FDA or regulatory approval under the Section 505 (b)(2) regulatory pathway under the Federal Food, Drug and Cosmetic Act;

•the future prospects of our GTX-104, GTX-102 and GTX-101 drug candidates;

•our plan to prioritize the development of GTX-104;

•our plan to maximize the value of our de-prioritized drug candidates, GTX-102 and GTX-101, including through potential development, out-licensing or sale of those drug candidates;

•the quality of our clinical data, the cost and size of our development programs, expectations and forecasts related to our target markets and the size of our target markets; the cost and size of our commercial infrastructure and manufacturing needs in the United States, European Union, and the rest of the world; and our expected use of a range of third-party contract research organizations and contract manufacturing organizations at multiple locations;

•expectations and forecasts related to our intellectual property portfolio, including but not limited to the probability of receiving orphan drug designation from the FDA for our leading pipeline products; our patent portfolio strategy; and outcomes of our patent filings and extent of patent protection;

•our strategy, future operations, prospects and the plans of our management with a goal to enhance shareholder value;

•our intellectual property position and duration of our patent rights;

•our need for additional financing, and our estimates regarding our operating runway and timing for future financing and capital requirements;

•our expectation regarding our financial performance, including our costs and expenses, liquidity, and capital resources;

•our projected capital requirements to fund our anticipated expenses; and

•our ability to establish strategic partnerships or commercial collaborations or obtain non-dilutive funding.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this prospectus, particularly under "Risk Factors" on page 6 of this prospectus and the documents incorporated herein that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, collaborations or investments we may make. The following are some of the factors that could cause actual results to differ materially from the expectations expressed, anticipated or implied in our forward-looking statements:

•we are dependent on the success of our lead drug candidate, GTX-104;

•clinical development is a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results. Failure can occur at any stage of clinical development;

•we are subject to uncertainty relating to healthcare reform measures and reimbursement policies which, if not favorable to our drug candidates, could hinder or prevent our drug candidates' commercial success;

•if we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our drug products, if approved, we may be unable to generate any revenue;

•if we are unable to differentiate our drug products from branded reference drugs or existing generic therapies for similar treatments, or if the U.S. Food and Drug Administration ("FDA") or other applicable regulatory authorities approve products that compete with any of our drug products, our ability to successfully commercialize our drug products would be adversely affected;

•our success depends in part upon our ability to protect our intellectual property for our drug candidates;

•intellectual property rights do not necessarily address all potential threats to our competitive advantage;

•we do not have internal manufacturing capabilities, and if we fail to develop and maintain supply relationships with various third-party manufacturers, we may be unable to develop or commercialize our drug candidates;

•the design, development, manufacture, supply, and distribution of our drug candidates are highly regulated and technically complex; and

•the other risks and uncertainties identified in Item 1A. Risk Factors included in our Annual Report on Form 10-K for the year ended March 31, 2023.

You should read this prospectus, the documents that we have incorporated by reference into this prospectus, and the documents that we have filed as exhibits to this prospectus completely and with the understanding that our actual future results may be materially different from what we expect.

Except as required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. You should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements. Before deciding to purchase our securities, you should carefully consider the risk factors discussed and incorporated by reference in this prospectus and the documents incorporated herein.



USE OF PROCEEDS

The net proceeds from any disposition of our common shares covered hereby will be received by the Selling Shareholders. We will not receive any of the proceeds from any such common shares offered by this prospectus. We will, however, receive the net proceeds of any Warrants exercised for cash. We expect to use the net proceeds received from the exercise of the Warrants for cash, if any, for clinical trial expenses in connection with the anticipated completion of our Phase 3 clinical trial for GTX-104, working capital and other general corporate purposes.

DIVIDEND POLICY

We have never paid cash dividends on our common shares. Moreover, we do not anticipate paying periodic cash dividends on our common shares for the foreseeable future. We intend to use all available cash and liquid assets in the operation and expansion of our business. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend upon our results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law and other factors our board of directors deems relevant.

SELLING SHAREHOLDERS

Our common shares being offered by the Selling Shareholders are those Shares previously issued to the Selling Shareholders in the Private Placement Offering, and those Warrant Shares issuable to the Selling Shareholders upon exercise of the Warrants sold to the Selling Shareholders in the Private Placement Offering. We are registering the Shares and Warrant Shares in order to permit the Selling Shareholders to offer the Shares and Warrant Shares for resale from time to time.

Shore Pharma LLC, an entity controlled by Vimal Kavuru, the Chair of our board of directors and the previous chairman of the Grace Therapeutics Inc. board of directors, prior to its acquisition by the Company; and SS Pharma LLC, the beneficial owner of 5.5% of our common shares prior to the Private Placement Offering, each a related party of ours, participated in the Private Placement Offering and are included as Selling Shareholders hereunder. Other than Shore Pharma LLC and SS Pharma LLC, none of the other Selling Shareholders, nor any person having control over the Selling Shareholders, have held any position or office with us or our affiliates within the last three years or have had a material relationship with us or any of our predecessors or affiliates within the past three years.

The Selling Shareholders may sell some, all or none of their Shares and Warrant Shares. We do not know how long the Selling Shareholders will hold the Warrants, whether any Warrants will be exercised, and upon such exercise, how long such Selling Shareholders will hold the Warrant Shares before selling them, and we currently have no agreements, arrangements or understandings with the Selling Shareholders regarding the sale of any of the Shares or Warrant Shares.

The following table presents information regarding the Selling Shareholders and the Shares and Warrant Shares that each may offer and sell from time to time under this prospectus. The table is prepared based on information supplied to us by the Selling Shareholders without regard to ownership limitations set forth in the applicable agreements or other documents relating to such Shares, Warrants and Warrant Shares, including (i) all of the Shares and Warrant Shares offered hereby, and (ii) to our knowledge, all other securities held by each of the Selling Shareholders as of the date hereof, and reflects their respective holdings as of October 5, 2023. Except as noted below, beneficial ownership is determined in accordance with Section 13(d) of the Securities and Exchange Act of 1934, as amended (the "Exchange Act"), and Rule 13d-3 thereunder.

Shares Beneficially Owned After this Offering

| Selling Shareholder | Number of Shares Beneficially Owned Before this Offering ⁽¹⁾ | Number of Shares to be Sold in this Offering | Number of Shares | Percentage of Total Outstanding Common Shares ⁽¹⁾ |
|-----------------------------------|--|--|------------------|--|
| ADAR1 Partners, LP ⁽²⁾ | 3,323,885 | 3,297,306 | 26,579 | * |
| Joseph F. Lawler ⁽³⁾ | 1,099,103 | 1,099,103 | 0 | - |
| SS Pharma LLC ⁽⁴⁾ | 1,505,846 | 1,099,103 | 406,743 | 2.896% |
| Shore Pharma LLC ⁽⁵⁾ | 1,610,808 | 1,099,103 | 511,705 | 4% |

* Represents beneficial ownership of less than one percent.

(1)The ability to exercise the Warrants held by the Selling Shareholders is subject to a beneficial ownership limitation that, at the time of initial issuance of the Warrants, was capped at 4.99%, 9.99% or 19.99% (solely with respect to Shore Pharma LLC) beneficial ownership of our issued and outstanding common shares (post-exercise). These beneficial ownership limitations may be adjusted up or down (up to 19.99%), subject to providing advanced notice to us, provided, however, such Selling Shareholder may increase or decrease such percentage to any other percentage not in excess of 19.99%, provided that any increase in such percentage shall not be effective until 61 days after such notice is delivered to the Company. Beneficial ownership limitations. Accordingly, actual beneficial ownership, as calculated in accordance with Section 13(d) and Rule 13d-3 thereunder may be lower than as reflected in the table.

(2)The address of ADAR1 Partners, LP is c/o ADAR1 Capital Management, LLC, 3503 Wild Cherry Drive, Building 9, Austin, TX 78738. The Warrants held by ADAR1 Partners, LP are subject to a beneficial ownership limitation of 4.99%, which limitation restricts ADAR1 Partners, LP from exercising that portion of the Warrants that would result in ADAR1 Partners, LP and its affiliates owning, after exercise, a number of common shares in excess of the beneficial ownership limitation. The amounts and percentages in the table do not give effect to the beneficial ownership limitation.

(3)The address of Joseph F. Lawler is 2110 Ranch Road 620 S, #341732, Lakeway, TX 78734. The Warrants held by Joseph F. Lawler are subject to a beneficial ownership limitation of 4.99%, which limitation restricts Joseph F. Lawler from exercising that portion of the Warrants that would result in Joseph F. Lawler and his affiliates owning, after exercise, a number of common shares in excess of the beneficial ownership limitation. The amounts and percentages in the table do not give effect to the beneficial ownership limitation.



(4)The address for SS Pharma LLC is 186 Princeton Hightsown Road, Building 3A, Suite 6, West Windsor, New Jersey 08550. The Warrants held by SS Pharma LLC are subject to a beneficial ownership limitation of 9.99%, which limitation restricts SS Pharma LLC from exercising that portion of the Warrants that would result in SS Pharma LLC and its affiliates owning, after exercise, a number of common shares in excess of the beneficial ownership limitation. The amounts and percentages in the table do not give effect to the beneficial ownership limitation.

(5)The securities are directly held by Shore Pharma LLC and may be deemed to be beneficially owned by Vimal Kavuru, the Chair of the Company's board of directors, as the sole member of Shore Pharma LLC. The address of Shore Pharma LLC is 11 Maacka Drive, Holmdel, NJ 07733. The Warrants held by Shore Pharma LLC are subject to a beneficial ownership limitation of 19.99%, which limitation restricts Shore Pharma LLC from exercising that portion of the Warrants that would result in Shore Pharma LLC and its affiliates owning, after exercise, a number of common shares in excess of the beneficial ownership limitation. The amounts and percentages in the table do not give effect to the beneficial ownership limitation.

PLAN OF DISTRIBUTION

We are registering the Shares and Warrant Shares on behalf of the Selling Shareholders named herein. The Selling Shareholders and any of their pledgees, assignees, and successors-in-interest may, from time to time, on a continuous or delayed basis, sell any or all of their securities covered hereby directly to one or more purchasers or through brokers, dealers, or underwriters who may act solely as agents at market prices prevailing at the time of sale, at prices related to the prevailing market prices, at negotiated prices, or at fixed prices, which may be changed on any stock exchange, market or trading facility on which our common shares are traded or in private transactions. The sale of the Selling Shareholders' securities offered by this prospectus may be effected in one or more of the following methods:

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

·transactions involving cross or block trades;

- •purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- •exchange distributions in accordance with the rules of the applicable exchange;
- •privately negotiated transactions;
- •short sales after the registration statement of which this prospectus forms a part becomes effective;
- •transactions through broker-dealers to sell a specified number of such securities at a stipulated price per share;
- •through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- •"at the market" into an existing market for our common shares;
- •through the writing of options on the securities;
- •a combination of any such methods of sale; and
- •any other method permitted pursuant to applicable law.

In order to comply with the securities laws of certain states, if applicable, the securities of the Selling Shareholders may be sold only through registered or licensed brokers or dealers. In addition, in certain states, such securities may not be sold unless they have been registered or qualified for sale in the state or an exemption from the registration or qualification requirement is available and complied with.

The Selling Shareholders may also sell or transfer their securities pursuant to any available exemption from the registration requirements of the Securities Act, including under Rule 144 promulgated under the Securities Act, or Rule 144, if available, rather than under this prospectus. In addition, the Selling Shareholders may transfer their securities by other means not described in this prospectus.

The Selling Shareholders may also sell their securities directly to market makers acting as principals and/or broker-dealers acting as agents for themselves or their customers. Such broker-dealers may receive compensation in the form of discounts, concessions or commissions from the Selling Shareholders and/or the purchasers of such securities for whom such broker-dealers may act as agents or to whom they sell as principal or both, which compensation as to a particular broker-dealer might be in excess of customary commissions. Market makers and block purchasers purchasing the securities will do so for their own account and at their own risk. It is possible that the Selling Shareholders will attempt to sell their securities in block transactions to market makers or other purchasers at a price per share that may be below the then market price.

Brokers, dealers, underwriters, or agents participating in the distribution of the securities held by the Selling Shareholders as agents may receive compensation in the form of commissions, discounts, or concessions from the Selling Shareholders and/or purchasers of the securities for whom the broker-dealers may act as agent. The Selling Shareholders may agree to indemnify any agent, dealer or broker-dealer that participates in transactions involving sales of their securities if liabilities are imposed on that person under the Securities Act.

The Selling Shareholders have advised us that they have not entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of their securities, nor is there an underwriter or coordinating broker acting in connection with a proposed sale of securities by the Selling Shareholders. If we are notified by the Selling Shareholders that any material arrangement has been entered into with a broker-dealer for the sale of securities if required, we will file a supplement to this prospectus.

In connection with the sale of the securities or interests therein, the Selling Shareholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. The Selling Shareholders may also sell their securities short and deliver these securities to close out their short positions, or loan or pledge the securities to broker-dealers that in turn may sell these securities. The Selling Shareholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities that require the



delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

With regard only to any securities it sells for its own behalf, each Selling Shareholder may be deemed an "underwriter" within the meaning of the Securities Act. This offering as it relates to each Selling Shareholder will terminate on the date that all securities offered by the Selling Shareholder pursuant to this prospectus have been sold.

We may suspend the sale of securities by the Selling Shareholders pursuant to this prospectus for certain periods of time for certain reasons, including if the prospectus is required to be supplemented or amended to include additional material information.

If the Selling Shareholders use this prospectus for any sale of their securities, the Selling Shareholders will be subject to the prospectus delivery requirements of the Securities Act.

We will pay the expenses in connection with the registration of the securities being registered hereunder. We have agreed to indemnify the Selling Shareholders against certain losses, claims, damages and liabilities in accordance with the Securities Purchase Agreement.

We agreed to use commercially reasonable efforts to keep this registration statement continuously effective under the Securities Act, and prepare and file prospectus supplements that includes any information previously omitted from the prospectus filed as part of the initial registration statement and pre- and post-effective amendments as necessary, until the date that all of the securities have been sold thereunder or pursuant to Rule 144.

Regulation M

The anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of our common shares and activities of the Selling Shareholders.

While the Selling Shareholders are engaged in a distribution of the securities included in this prospectus they are required to comply with Regulation M promulgated under the Exchange Act. With certain exceptions, Regulation M precludes the Selling Shareholders, any affiliated purchasers, and any broker-dealer or other person who participates in the distribution from bidding for or purchasing, or attempting to induce any person to bid for or purchase any security that is the subject of the distribution until the entire distribution is complete. Regulation M also prohibits any bids or purchases made in order to stabilize the price of a security in connection with the distribution of that security. All of the foregoing may affect the marketability of the shares offered hereby this prospectus.



DESCRIPTION OF COMMON SHARES

The summary of general terms and provisions of our common stock set forth below does not purport to be complete and is subject to and qualified by reference to our Articles of Incorporation, as amended (the "Articles of Incorporation") and Amended and Restated General By-laws (the "Bylaws," and together with the Articles of Incorporation, the "Charter Documents"), each of which is included as an exhibit hereto or to our most recent Annual Report on Form 10-K filed with the SEC and incorporated by reference herein. For additional information, please read the Charter Documents and the applicable provisions of the QBCA.

Authorized Common Shares

We are authorized to issue an unlimited number of common shares, no par value per share. As of October 3, 2023, there were 9,399,404 common shares outstanding, held by 114 shareholders of record. This figure does not reflect the number of beneficial owners of common shares as a single shareholder of record often holds common shares in nominee name (also referred to as, in "street name") on behalf of multiple beneficial owners.

Rights of Common Shares

Holders of common shares are entitled to receive notice of any meetings of shareholders, to attend and to cast one vote per common share at all such meetings. Holders of common shares do not have cumulative voting rights with respect to the election of directors and, accordingly, holders of a majority of the common shares entitled to vote in any election of directors may elect all directors standing for election.

Our common shares do not carry any pre-emptive, subscription, redemption, retraction, conversion or exchange rights, nor do they contain any cancellation, surrender, sinking or purchase fund provisions, nor provisions permitting or restricting the issuance of additional securities or requiring a holder of common shares to contribute additional capital.

Dividends

Under the QBCA and our By-laws, dividends may be declared at the discretion of our board of directors. We may pay dividends unless there are reasonable grounds for believing that (i) we are insolvent, or (ii) the payment of the dividend would render us insolvent. The Articles of Incorporation provide that the holders of common shares shall be entitled to receive any dividends declared by our board of directors and we shall pay dividends thereon, as and when declared by our board of directors, according to the order of priority applicable to the classes of shares set out in the Articles of Incorporation.

Winding-up and Dissolution

In the event of our voluntary or involuntary winding-up or dissolution, or any other distribution of our assets among our shareholders for the purposes of winding up our affairs, the holders of common shares will be entitled to receive, after payment by us to the holders of preferred shares, if any, ranking prior to common shares regarding the distribution of our assets in the case of winding-up or dissolution, share for share, the remainder of our property, with neither preference nor distinction.

Outstanding Warrants

On September 25, 2023, we issued to the Selling Shareholders (i) Pre-Funded Warrants to purchase up to 2,106,853 Pre-Funded Warrant Shares and (ii) Common Warrants to purchase up to 2,536,391 Common Warrant Shares. Each Common Warrant will expire on the earlier of (i) the 60th day after the date of the acceptance by the U.S. Food and Drug Administration of a New Drug Application for the Company's product candidate GTX-104 or (ii) five years from the date of issuance, and may be exercised at an exercise price of \$3.003 per Common Warrant Share. The Pre-Funded Warrants are exercisable immediately upon issuance, have an exercise price of \$0.0001 per Pre-Funded Warrant Share and expire when exercise disting the terms of the Warrants, a holder may not exercise the Warrants to the extent such exercise would cause such holder, together with its affiliates and attribution parties, to beneficially own a number of our common shares which would exceed 4.99%, 9.99% or 19.99%, at the holder's election, of our then outstanding common shares following such exercise, excluding for purposes of such determination our common shares issuable upon exercise of such Warrants which have not been exercised, provided, however, such holder may increase or decrease such percentage to any other percentage not in excess of 19.99%, provided that any increase in such percentage shall not be effective until 61 days after such notice is delivered to us.

If a Fundamental Transaction (as defined in the Warrants) occurs, then the successor entity will succeed to, and be substituted for us, and may exercise every right and power that we may exercise and will assume all of our obligations under the Warrants with the same effect as if such successor entity had been named in the Warrants itself. If holders of common shares are given a choice as to the securities, cash or property to be received in such a Fundamental Transaction, then the holder shall be given the same choice as to the consideration it would receive upon any exercise of the Warrants following such a Fundamental Transaction. Additionally, as more fully



described in the Common Warrants, in the event of certain Fundamental Transactions, the holders of the Common Warrants will be entitled to receive cash consideration in an amount equal to the Black Scholes value of the Common Warrants.

Listing

Our common shares are traded on the Nasdaq Capital Market under the symbol "ACST."

Transfer Agent and Registrar

The transfer agent and registrar for our common shares is Computershare Investor Services Inc.

MATERIAL DIFFERENCES BETWEEN THE BUSINESS CORPORATIONS ACT (QUÉBEC) AND THE DELAWARE GENERAL CORPORATION LAW

We are governed by the QBCA, which is generally similar to laws applicable to U.S. corporations. Significant differences between the QBCA and the Delaware General Corporation Law, or DGCL, which governs companies incorporated in the State of Delaware, include the differences summarized below. This summary is not an exhaustive review of the two statutes, and reference should be made to the full text of both statutes for particulars of the differences.

| | Delaware | QBCA |
|----------------------------------|---|--|
| Number and Election of Directors | Under the DGCL, the board of directors must consist of at least one director. The number of directors shall be fixed by the bylaws of the corporation, unless the certificate of incorporation fixes the number of directors, in which case a change in the number of directors shall only be made by an amendment of the certificate of incorporation. Under the DGCL, directors are elected at annual stockholder meetings by plurality vote of the stockholders, unless a shareholder- adopted bylaw prescribes a different required vote. | Under the QBCA, the board of directors of a corporation must consist of at least three members, at least two of whom must not be officers or employees of the corporation or an affiliate of the corporation, so long as the corporation remains a "reporting issuer" for purposes of the QBCA, which includes a corporation that has made a distribution of securities to the public. Under the QBCA, directors are elected by the shareholders, in the manner and for the term, not exceeding three years, set out in the corporation's bylaws. Our bylaws provide that our directors are elected at each annual meeting of shareholders at which such an election is required. |
| Removal of Directors | Under the DGCL, any director or the entire board of directors may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors, except (i) unless the certificate of incorporation provides otherwise, in the case of a corporation whose board of directors is classified, stockholders may effect such removal only for cause, or (ii) in the case of a corporation having cumulative voting, if less than the entire board of directors is to be removed, no director may be removed without cause if the votes cast against his removal would be sufficient to elect him if then cumulatively voted at an election of the entire board of directors, or, if there are classes of directors, at an election of the class of directors of which he is a part. | Under the QBCA, unless the articles of a corporation provide for cumulative voting (which is not the case for us), shareholders of the corporation may, by resolution passed by a majority of the vote cast thereon at a special meeting of shareholders, remove any or all directors from office and may elect any qualified person to fill the resulting vacancy. |

Vacancies on the Board of Directors

Board of Director Quorum and Vote Requirements

Transactions with Directors and Officers

Under the DGCL, vacancies and newly created directorships may be filled by a majority of the directors then in office (even though less than a quorum) or by a sole remaining director unless (i) otherwise provided in the certificate of incorporation or bylaws of the corporation or (ii) the certificate of incorporation directs that a particular class of stock is to elect such director, in which case a majority of the other directors elected by such class, or a sole remaining director elected by such class, will fill such vacancy.

Under the DGCL, a majority of the total number of directors shall constitute a quorum for the transaction of business unless the certificate of incorporation or bylaws require a greater number. The bylaws may lower the number required for a quorum to one-third the number of directors, but no less.

Under the DGCL, the board of directors may take action by the majority vote of the directors present at a meeting at which a quorum is present unless the certificate of incorporation or bylaws require a greater vote.

The DGCL generally provides that no transaction between a corporation and one or more of its directors or officers, or between a corporation and any other corporation or other organization in which one or more of its directors or officers, are directors or officers, or have a financial interest, shall be void or voidable solely for this reason, or solely because the director or officer is present at or participates in the meeting of the board or committee which authorizes the transaction, or solely because any such director's or officer's votes are counted for such purpose, if (i) the material facts as to the director's or officer's interest and as to the transaction are known to the board of directors or the committee, and the board or committee in good faith authorizes the transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum (ii) the material facts as to the director's or officer's interest and as to the transaction are disclosed or are known to the stockholders entitled to vote thereon, and the transaction is specifically approved in good faith by vote of the stockholders; or (iii) the transaction is fair as to the

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Under the QBCA, vacancies that exist on the board of directors may generally be filled by the board if the remaining directors constitute a quorum. In the absence of a quorum, the remaining directors shall call a meeting of shareholders to fill the vacancy. If the directors refuse or fail to call a meeting or if there are no directors then in office, the meeting may be called by any shareholder.

Under the QBCA, subject to the corporation's bylaws, a majority of the directors in office constitutes a quorum at any meeting of the board. Our bylaws also provide that a majority of the directors in office constitutes a quorum at any meeting of the board.

Under the QBCA, a quorum of directors may exercise all the powers of the directors despite any vacancy on the board.

Under the QBCA, every director or officer of a corporation must disclose the nature and value of any interest he or she has in a contract or transaction to which the corporation is a party. For the purposes of this rule, "interest" means any financial stake in a contract or transaction that may reasonably be considered likely to influence decision-making. Furthermore, a proposed contract or a proposed transaction, including related negotiations, is considered a contract or transaction. In addition, a director or an officer must disclose any contract or transaction to which the corporation and any of the following are a party: (i) an associate of the director or officer; (ii) a group of which the director or officer is a director or officer; or (iii) a group in which the director or officer or an associate of the director or officer has an interest. Such disclosure is required even for a contract or transaction that does not require approval by the board of directors. If a director is required to disclose his or her interest in a contract or transaction, such director is not allowed to vote on any resolution to approve, amend or terminate the contract or transaction or be present during deliberations concerning the

corporation as of the time it is authorized, approved or ratified, by the board of directors, a committee or the stockholders. approval, amendment or termination of such contract or transaction, unless the contract or transaction (i) relates primarily to the remuneration of the director or an associate of the director as a director, officer, employee or mandatory of the corporation or an affiliate of the corporation, (ii) is for indemnity or liability insurance under the QBCA, or (iii) is with an affiliate of the corporation, and the sole interest of the director is as a director or officer of the affiliate.

If a director or officer does not disclose his or her interest in accordance with the QBCA, or (in the case of a director) votes in respect of a resolution on a contract or transaction in which he or she is interested contrary to the QBCA, the corporation or a shareholder may ask the court to declare the contract or transaction null and to require the director or officer to account to the corporation for any profit or gain realized on it by the director or officer or the associates of the director or officer, and to remit the profit or gain to the corporation, according to the conditions the court considers appropriate. However, the contract or transaction may not be declared null if it was approved by the board of directors and the contract or transaction was in the interest of the corporation when it was approved, nor may the director or officer concerned, in such a case, be required to account for any profit or gain realized or to remit the profit or gain to the corporation. In addition, the contract or transaction may not be declared null if it was approved by ordinary resolution by the shareholders entitled to vote who do not have an interest in the contract or transaction, the required disclosure was made to the shareholders in a sufficiently clear manner and the contract or transaction was in the best interests of the corporation when it was approved, and if the director or officer acted honestly and in good faith, he or she may not be required to account for the profit or gain realized and to remit the profit or gain to the corporation.

| Limitation on Liability of Directors | Under the DGCL, a corporation's certificate of incorporation may include a provision eliminating or limiting the personal liability of a director to the corporation and its stockholders for damages arising from a breach of fiduciary duty as a director. However, no provision can limit the liability of a director for: •breach of the director's duty of loyalty to the | The QBCA does not permit the limitation of a director's liability as the DGCL does. |
|---|--|--|
| | corporation or its stockholders; | |
| | •acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of the law; | |
| | intentional or negligent payment of unlawful dividends or stock purchases or redemptions; or | |
| | • for any transaction from which the director derived an improper personal benefit. | |
| Indemnification of Directors and Officers | The DGCL permits indemnification for derivative suits only for expenses (including legal fees) and only if the person is not found liable, unless a court determines the person is fairly and reasonably entitled to the indemnification. | Under the QBCA, a corporation must indemnify a director or officer, a former director or officer or a person who acts or acted at the corporation's request as a director or officer, or an individual acting in a similar capacity of another group (who is referred to in this document as an indemnifiable person) against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the indemnifiable person on the exercise of the person's functions or arising from any investigative or other proceeding in which the person is involved if: |
| | | •the person acted honestly and loyally in the interest of the corporation or other group, and |
| | | •in the case of a proceeding enforceable by a monetary penalty, the person had reasonable grounds for believing the person's conduct was lawful. |
| | | In the case of a derivative action, indemnity may be made only with court approval. |
| Call and Notice of Shareholder Meetings | Under the DGCL, an annual or special stockholder meeting is held on such date, at such time and at such place as may be designated by the board of directors or any other person authorized to call such meeting under the corporation's certificate of incorporation or bylaws. If an annual | Under the QBCA, an annual meeting of shareholders must be held no later than 15 months after holding the last preceding annual meeting. Under the QBCA, the directors of a corporation may call a special meeting at any time. In addition, holders of not less than 10% of the issued shares of a |

meeting for election of directors is not held on the date corporation that carry the right to vote at a meeting designated or an action by written consent to elect sought to be held may requisition the directors to call a directors in lieu of an annual meeting has not been taken meeting of shareholders for the purposes stated in the within 30 days after the date designated for the annual requisition. meeting, or if no date has been designated, for a period of 13 months after the later of the last annual meeting or the last action by written consent to elect directors in lieu of an annual meeting, the Delaware Court of Chancery may summarily order a meeting to be held upon the application of any stockholder or director. Shareholder Action by Written Consent Under the DGCL, a majority of the stockholders of a Under the OBCA, a written resolution signed by all the corporation may act by written consent without a meeting shareholders of a corporation who would have been unless such action is prohibited by the corporation's entitled to vote on the resolution at a meeting is effective certificate of incorporation. to approve the resolution. Shareholder Nominations and Proposals Not applicable. Under the QBCA, a shareholder entitled to vote at a shareholders' meeting may submit a shareholder proposal relating to matters which the shareholder wishes to propose and discuss at an annual shareholders' meeting and, subject to such shareholder's compliance with the prescribed time periods and other requirements of the QBCA pertaining to shareholder proposals, the corporation is required to include such proposal in the information circular pertaining to any annual meeting at which it solicits proxies, subject to certain exceptions. Notice of such a proposal must be provided to the corporation at least 90 days before the anniversary date of the notice of meeting for the last annual shareholders' meeting. In addition, the QBCA requires that any shareholder proposal that includes nominations for the election of directors must be signed by one or more holders of shares representing in the aggregate not less than five per cent of the shares or five per cent of the shares of a class of shares of the corporation entitled to vote at the meeting to which the proposal is to be presented. Our bylaws require shareholders wishing to nominate directors or propose business for a meeting of shareholders to give timely advance notice in writing, as described in our bylaws.

Shareholder Quorum and Vote Requirements

Amendment of Certificate of Incorporation

Amendment of Bylaws

Under the DGCL, quorum for a stock corporation is a majority of the shares entitled to vote at the meeting unless the certificate of incorporation or bylaws specify a different quorum, but in no event may a quorum be less than one-third of the shares entitled to vote. Unless the DGCL, certificate of incorporation or bylaws provide for a greater vote, generally the required vote under the DGCL is a majority of the shares present in person or represented by proxy, except for the election of directors which requires a plurality of the votes cast.

Generally, under the DGCL, the affirmative vote of the holders of a majority of the outstanding stock entitled to vote is required to approve a proposed amendment to the certificate of incorporation, following the adoption of the amendment by the board of directors of the corporation, provided that the certificate of incorporation may provide for a greater vote. Under the DGCL, holders of outstanding shares of a class or series are entitled to vote separately on an amendment to the certificate of incorporation if the amendment would have certain consequences, including changes that adversely affect the rights and preferences of such class or series.

Under the DGCL, after a corporation has received any payment for any of its stock, the power to adopt, amend or repeal bylaws shall be vested in the stockholders entitled to vote; provided, however, that any corporation may, in its certificate of incorporation, provide that bylaws may be adopted, amended or repealed by the board of directors. The fact that such power has been conferred upon the board of directors shall not divest the stockholders of the power nor limit their power to adopt, amend or repeal the bylaws. Under the QBCA, unless the bylaws otherwise provide, the holders of a majority of the shares of a corporation entitled to vote at a meeting of shareholders, whether present in person or represented by proxy, constitute a quorum.

Under the QBCA, amendments to the articles generally require the approval of not less than two-thirds of the votes cast by shareholders entitled to vote on the resolution. Specified amendments may also require the separate approval of other classes of shares. If the amendment is of a nature affecting a particular class or series in a manner requiring a separate class or series vote, that class or series is entitled to vote on the amendment whether or not it otherwise carries the right to vote.

Under the QBCA, the directors may, by resolution, make, amend or repeal any bylaws that regulates the business or affairs of the corporation. Where the directors make, amend or repeal a bylaw, they are required under the QBCA to submit that action to the shareholders at the next meeting of shareholders and the shareholders may ratify, reject or amend that action by simple majority, or ordinary resolution. If the action is rejected by shareholders, or the directors of a corporation do not submit the action to the shareholders at the next meeting of shareholders, the action in respect of the bylaws will cease to be effective, and no subsequent resolution of the directors to make, amend or repeal a bylaw having substantially the same purpose or effect will he effective until it is confirmed.

Votes on Amalgamations, Mergers, Consolidations and Sales of Assets

The DGCL provides that, unless otherwise provided in the certificate of incorporation or bylaws, the adoption of a merger agreement requires the approval of a majority of the outstanding stock of the corporation entitled to vote thereon. Under the QBCA, certain extraordinary corporate actions, such as amalgamations (other than with certain affiliated corporations), continuances and sales, leases or exchanges of the property of a corporation if as a result of such alienation the corporation would be unable to retain a significant part of its business activities, and other extraordinary corporate actions such as liquidations, dissolutions and (if ordered by a court) arrangements, are required to be approved by "special resolution."

A "special resolution" is a resolution passed by not less than two-thirds of the votes cast by the shareholders who voted in respect of the resolution or signed by all shareholders entitled to vote on the resolution. In specified cases, a special resolution to approve the extraordinary corporate action is also required to be approved separately by the holders of a class or series of shares, including in certain cases a class or series of shares not otherwise carrying voting rights.

The QBCA provides that shareholders of a corporation are entitled to exercise dissent rights (called "the right to demand the repurchase of shares") and to be paid the fair value of their shares in connection with specified matters, including:

- •amalgamation with another corporation (other than with certain affiliated corporations);
- •amendment to the corporation's articles to add, change or remove any provisions restricting or constraining the transfer of shares;
- •amendment to the corporation's articles to add, change or remove any restriction upon the businesses or businesses that the corporation may carry on;
- continuance under the laws of another jurisdiction;
- •alienation of the property of the corporation or of its subsidiaries if, as a result of such alienation, the corporation is unable to retain a significant part of its business activity;

•a court order permitting a shareholder to exercise his right to demand the repurchase of his shares in connection with an application to the court for an order

Dissenter's Rights of Appraisal

Under the DGCL, a stockholder of a Delaware corporation generally has the right to dissent flume, merger or consolidation in which the Delaware corporation is participating, subject to specified procedural requirements, including that such dissenting stockholder does not vote in favor of the merger or consolidation. However, the DGCL does not confer appraisal rights, in certain circumstances, including if the dissenting stockholder owns shares traded on a national securities exchange and will receive publicly traded shares in the merger or consolidation. Under the DGCL, a stockholder asserting appraisal rights does not receive any payment for his or her shares until the court determines the fair value or the parties otherwise agree to a value. The costs of the proceeding may be determined by the court and assessed against the parties as the court deems equitable under the circumstances.

approving an arrangement proposed by the corporation;

•certain amendments to the articles of a corporation which require a separate class or series vote by a holder of shares of any class or series.

The QBCA provides an oppression remedy (called "rectification of abuse of power or iniquity") that enables a court to make any order, whether interim or final, to rectify matters that are oppressive or unfairly prejudicial to the interests of any securityholder, director or officer of the corporation if an application is made to a court by an "applicant". An "applicant" with respect to a corporation means any of the following:

•a present or former registered holder or beneficiary of securities of the corporation or any of its affiliates;

•a present or former officer or director of the corporation or any of its affiliates; and

•any other person who in the discretion of the court has the interest required to make the application.

The oppression remedy provides the court with very broad and flexible powers to intervene in corporate affairs to protect shareholders and other complainants. While conduct that is in breach of fiduciary duties of directors or that is contrary to the legal right of a complainant will normally trigger the court's jurisdiction under the oppression remedy, the exercise of that jurisdiction does not depend on a finding of a breach of those legal and equitable rights.

Furthermore, the court may order a corporation to pay the interim expenses of an applicant seeking an oppression remedy, but the applicant may be held accountable for interim costs on final disposition of the complaint (as in the case of a derivative action as described in "Shareholder Derivative Actions" below).

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Oppression Remedy

The DGCL does not provide for a similar remedy.

Under the DGCL, stockholders may bring derivative actions on behalf of, and for the benefit of the corporation. The plaintiff in a derivative action on behalf of the corporation either must be or have been a stockholder of the corporation at the time of the transaction or must be a stockholder who became a stockholder by operation of law in the transaction regarding which the stockholder complains. A stockholder may not sue derivatively on behalf of the corporation unless the stockholder first makes demand on the corporation that it bring suit and the demand is refused, unless it is shown that making the demand would have been a futile act. Under the QBCA, a shareholder of a corporation may apply to a Québec court for leave to bring an action in the name of, and on behalf of, the corporation or any subsidiary, or to intervene in an existing action to which the corporation or any of its subsidiaries is a party, for the purpose of prosecuting, defending or discontinuing an action on behalf of the corporation or its subsidiary. Under the QBCA, no action may be brought and no intervention in an action may be made unless a court is satisfied that:

•the shareholder has given the required 14-day notice to the directors of the corporation or the subsidiary of the shareholder's intention to apply to the court if the directors do not bring, diligently prosecute or defend or discontinue the action;

- •the shareholder is acting in good faith; and
- •it appears to be in the interests of the corporation or the relevant subsidiary that the action be brought, prosecuted, defended or discontinued.

Under the QBCA, the court in a derivative action may make any order it thinks fit. In addition, under the QBCA, a court may order the corporation or its relevant subsidiary to pay the shareholder's interim costs, including reasonable legal fees and disbursements.

While the QBCA does not contain specific anti- takeover provisions with respect to "business combinations," rules and policies of certain Canadian securities regulatory authorities, including Multilateral Instrument 61-101 -Protection of Minority Security Holders in Special Transactions, or Multilateral Instrument 61-101, contain requirements in connection with, among other things, 'related party transactions" and "business combinations", including, among other things, any transaction by which an issuer directly or indirectly engages in the following with a related party: acquires, sells, leases or transfers an asset, acquires the related party, acquires or issues treasury securities, amends the terms of a security if the security is owned by the related party or assumes or becomes subject to a liability or

Anti-Takeover and Ownership Provisions

Unless an issuer opts out of the provisions of Section 203 of the DGCL, Section 203 generally prohibits a public Delaware corporation from engaging in a "business combination" with a holder of 15% or more of the corporation's voting stock (as defined in Section 203), referred to as an interested stockholder, for a period of three years after the date of the transaction in which the interested stockholder became an interested stockholder, except as otherwise provided in Section 203. For these purposes, the term "business combination" includes mergers, assets sales and other similar transactions with an interested stockholder.

takes certain other actions with respect to debt.

The term "related party" includes directors, senior officers and holders of more than 10% of the voting rights attached to all outstanding voting securities of the issuer or holders of a sufficient number of any securities of the issuer to materially affect control of the issuer.

Multilateral Instrument 61-101 requires, subject to certain exceptions, the preparation of a formal valuation relating to certain aspects of the transaction and more detailed disclosure in the proxy material sent to security holders in connection with a related party transaction including related to the valuation. Multilateral Instrument 61-101 also requires, subject to certain exceptions, that an issuer not engage in a related party transaction unless the shareholders of the issuer, other than the related parties, approve the transaction by a simple majority of the votes cast.

LEGAL MATTERS

Certain legal matters relating to the issuance of the securities offered hereby will be passed upon for us by Osler, Hoskin & Harcourt LLP.

EXPERTS

Our consolidated financial statements as of and for the year ended March 31, 2023 included in our Annual Report on Form 10-K for the year ended March 31, 2023 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report, given on the authority of such firm as experts in accounting and auditing.

Our consolidated financial statements as of and for the year ended March 31, 2022, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

INCORPORATION BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The documents incorporated by reference into this prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this document:

- •our Annual Report on Form 10-K for the year ended March 31, 2023, filed on June 23, 2023;
- •our Quarterly Report on Form 10-Q for the quarter ended June 30, 2023 filed on August 11, 2023;

•our Current Reports on Form 8-K as filed with the Commission on <u>April 5, 2023, May 11, 2023, July 5, 2023, July 7, 2023</u> and <u>July 24, 2023</u>, and <u>September 26, 2023</u>, to the extent "filed" and not "furnished" pursuant to Section 13(a) of the Exchange Act; and

•the description of our common shares set forth in our registration statement on Form F-1 (File No. 333-220755) filed with the SEC on <u>September 29, 2017</u> and declared effective on <u>December 19, 2017</u> and our Form 8-A filed with the SEC on <u>January 4, 2013</u>, as updated by the description of our common shares filed as Exhibit 4.6 to our Annual Report on Form 10-K for the year ended March 31, 2022, filed with the Commission on <u>June 21, 2022</u>, including any amendment or report filed for the purpose of updating that description.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the initial registration statement of which this prospectus is a part and prior to the effectiveness of such registration statement and all documents that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this document modifies or supersedes the statement.

You may request, orally or in writing, a copy of any or all of the documents incorporated herein by reference. These documents will be provided to you at no cost, by contacting: Acasti Pharma Inc., Chief Executive Officer, at 2572 boul. Daniel-Johnson, 2nd Floor Laval, Québec, Canada H7T 2R3. In addition, copies of any or all of the documents incorporated herein by reference may be accessed at our website at www.acastipharma.com. The information on such website is not incorporated by reference and is not a part of this prospectus.

WHERE YOU CAN FIND MORE INFORMATION

We filed with the SEC a registration statement under the Securities Act for the securities offered by this prospectus. This prospectus does not contain all of the information in the registration statement and the exhibits and schedule that were filed with the registration statement. For further information with respect to us and our securities, we refer you to the registration statement and the exhibits and schedule that were filed with the registration statement. Statements contained in this prospectus about the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and we refer you to the full text

of the contract or other document filed as an exhibit to the registration statement. The SEC 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 www.sec.gov.

We file periodic reports under the Exchange Act, including annual, quarterly and current reports, and other information with the SEC. These periodic reports and other information are available for inspection and copying at the SEC regional offices, public reference facilities and on the website of the SEC referred to above.

We make available free of charge on or through our internet website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The information found on our website, www.acasti.com, other than as specifically incorporated by reference in this prospectus, is not part of this prospectus.

acasti

6,594,615 Common Shares

PROSPECTUS

, 2023

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the expenses to be incurred in connection with the offering described in this Registration Statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimates except the SEC registration fee.

| | Amount |
|------------------------------------|-----------------|
| SEC registration fee | \$ 2,608.62 |
| Accountant's fees and expenses | 41,000 |
| Legal fees and expenses | 50,000 |
| Pricing and miscellaneous expenses | 3,000 |
| Total expenses | \$ 96,608.62 |

Item 15. Indemnification of Directors and Officers.

Directors' and officers' liability insurance has been purchased for the benefit of the directors and officers of the registrant, to back up the registrant's indemnification of them against liability incurred in their capacity as directors and officers, subject to certain limitations under applicable law.

In accordance with the provisions of the *Business Corporations Act* (Québec), the by-laws of the registrant also provide that the registrant will indemnify a director or officer, a former director or officer, or an individual who acts or acted at the registrant's request as a director or officer or an individual acting in a similar capacity of another entity, and such person's heirs and legal representatives, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by such individual in respect of any civil, criminal, administrative investigative or other proceeding in which the individual is involved because of that association with the registrant or other entity, provided however that the registrant shall not so indemnify an individual unless the individual (i) acted honestly and in good faith with a view to the best interests of the registrant's request, and (ii) if the matter is a criminal or administrative action or proceeding that is enforced by a monetary penalty, had reasonable grounds for believing that the individual's conduct was lawful.

In addition, the registrant may advance money to a director, officer or other individual for the costs, charges and expenses of a proceeding referred to above, but the individual shall repay the registrant if the individual does not fulfil the conditions set out in (i) and (ii) above.

If the registrant becomes liable under the terms of its by-laws, the insurance coverage discussed above will extend to its liability; however, each claim will be subject to a per claim retention of nil to \$2,500,000, depending on the nature of the claim.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, or Securities Act, may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the Securities and Exchange Commission, or the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Item 16. Exhibits and Financial Statement Schedules.

(a)Exhibits

See the Exhibit Index List below, which is incorporated by reference herein.

Exhibit Number

Exhibit Title

<u>4.1</u>* <u>Articles of Incorporation, as amended</u>

- 4.2 Amended and Restated General By-Law (incorporated by reference to Exhibit 3.4 from Form 10-Q (File No. 001- 35776) filed with the Commission on August 11, 2023)
- 4.3 Advance Notice bylaw No. 2013-1 (incorporated by reference to Exhibit 4.3 from Form S-8 (File No. 333-191383) filed with the Commission on September 25, 2013)

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- 4.4 Specimen Certificate for Common Shares of Acasti Pharma Inc. (incorporated by reference to Exhibit 2.1 from Form 20-F (File No. 001- 35776) filed with the Commission on June 6, 2014)
- 4.5 Form of Common Warrant, dated September 25, 2023 (incorporated by reference to Exhibit 4.1 from Form 8-K (File No. 001-35776) filed with the Commission on September 26, 2023)
- 4.6 Form of Pre-Funded Warrant, dated September 25, 2023 (incorporated by reference to Exhibit 4.2 from Form 8-K (File No. 001-35776) filed with the Commission on September 26, 2023)
- 10.1 Form of Securities Purchase Agreement, dated September 24, 2023, by and between the Company and each of the Purchasers signatory thereto (incorporated by reference to Exhibit 10.1 from Form 8-K (File No. 001-35776) filed with the Commission on September 26, 2023)
- 5.1* Opinion of Osler, Hoskin & Harcourt LLP
- 23.1* Consent of Ernst & Young LLP
- 23.2* Consent of KPMG LLP
- 23.3* Consent of Osler, Hoskin & Harcourt LLP (included in Exhibit 5.1)
- 24.1* Power of attorney (included on Signature Page)
- <u>107*</u> <u>Filing Fee Table</u>

* Filed herewith.

Item 17. Undertakings.

The undersigned Registrant hereby undertakes:

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

(i)To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii)To reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in 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 Securities and Exchange Commission (the "Commission") pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

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

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) above do not apply if 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 Section 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), 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, 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 of the registrant under the Securities Act to any purchaser:

(i)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

(ii)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

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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 bus back of the registration statement or back of the registration statement or prospectus that was made in the registration statement or prospectus that was part of the registration statement or back of the registration statement or back of the registration statement or prospectus that was part of the registration statement or back of the registration statement or back of the registration statement or prospectus that was part of the registration statement or back of the registration statement

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.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC 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.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned thereunto duly authorized in the city of City of Laval, Québec, Canada, on this 6th day of October, 2023.

ACASTI PHARMA INC.

| By: | /s/ Prashant Kohli |
|--------|---|
| Name: | Prashant Kohli |
| Title: | Chief Executive Officer and (Principal Executive Officer) |

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Prashant Kohli as his true and lawful attorney-in-fact and agent, with the full power of substitution, for him and in his name, place or stead, in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments), and any other registration statements for the same offering pursuant to Rule 462(b) of the Securities Act of 1933, as amended, and to file the same, with exhibits thereto and other 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 might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

| Signature /s/ Prashant Kohli | Title Chief Executive Officer | Date October 6, 2023 |
|--|---|-------------------------|
| Prashant Kohli | (Principal Executive Officer) | |
| /s/ Brian Ford Brian Ford | Interim Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer) | October 6, 2023 |
| /s/ Vimal Kavuru Vimal Kavuru | Director, Chair of the Board or Directors | October 6, 2023 |
| /s/ Donald Olds Donald Olds | Director | October 6, 2023 |
| /s/ Michael L. Derby Michael L. Derby | Director | October 6, 2023 |



CERTIFICATE OF AMENDMENT

Business Corporations Act (CQLR, chapter S-31.1)

I attest that the legal person

ACASTI PHARMA INC.

has modified its articles pursuant to the Business Corporations Act (Québec) to integrate the changes outlined in the attached articles.

July 10, 2023 at 12:01 a.m.

Filed in the register on July 4, 2023 under the Québec Registration Number 1160589793.

(Signed) Registraire des entreprises

Registraire des entreprises

REZ-909 (2017-04)

Québec Enterprise Number:

Page 1 of 1

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Articles of Amendment

Business Corporations Act (Québec)

1Information about the business

ACASTI PHARMA INC.

Version(s) of the name of the corporation in any other language other than French, if applicable

2Amendment to Articles

2.1 Amendment to Name

2.2 Other Amendments

See Schedule Attached.

2.3. Date and Time of certificate, if applicable

Date: July 10, 2023 Time: 12:01 a.m.

3Correction of Articles

4Signature

Last name and first name of the authorized officer or director: Prashant Kohli

Electronic signature of: Prashant Kohli

Reserved for the administration Reference number of request: 020200103314688 Numeric designation:

SCHEDULE TO

ARTICLES OF AMENDMENT

OF

ACASTI PHARMA INC. (the "Corporation")

As of the date of the issuance of a Certificate of Amendment confirming the present Articles of Amendment, all of the issued and outstanding Class "A" Shares (the "Common Shares") in the capital of the Corporation are consolidated (the "Consolidation") on the bases of one (1) post-Consolidation Common Share for every six (6) pre-Consolidation Common Shares (provided that each fractional Common Share that results from the Consolidation shall be rounded up to the nearest whole number).

CERTIFICATE OF AMENDMENT

Business Corporations Act (CQLR, chapter S-31.1)

I attest that the legal person

ACASTI PHARMA INC.

has modified its articles pursuant to the Business Corporations Act (Québec) to integrate the changes outlined in the attached articles.

August 27, 2021

Filed in the register on August 26, 2021 under the Québec Registration Number 1160589793.

(Signed) Registraire des entreprises

Registraire des entreprises

REZ-909 (2017-04)

Québec Enterprise Number:

Page 1 of 1

1160589793

Articles of Amendment

Business Corporations Act (Québec)

1Information about the business

ACASTI PHARMA INC.

Version(s) of the name of the corporation in any other language other than French, if applicable

2Amendment to Articles

2.1 Amendment to Name

2.2 Other Amendments

See Schedule Attached.

2.3. Date and Time of certificate, if applicable

Date: August 27, 2021 Time:

3Correction of Articles

4Signature

Last name and first name of the authorized officer or director: Janelle D'Alvise

Electronic signature of: Janelle D'Alvise

Reserved for the administration Reference number of request: 020200085440883 Numeric designation:

SCHEDULE TO

ARTICLES OF AMENDMENT

OF

ACASTI PHARMA INC. (the "Corporation")

As of the date of the issuance of a Certificate of Amendment confirming the present Articles of Amendment, all of the issued and outstanding Class "A" Shares (the "Common Shares") in the capital of the Corporation are consolidated (the "Consolidation") on the bases of one (1) post-Consolidation Common Share for every 8 (eight) pre-Consolidation Common Shares (provided that each fractional Common Share that results from the Consolidation shall be rounded to the nearest whole number).

CERTIFICATE OF AMENDMENT

Business Corporations Act (CQLR, chapter S-31.1)

I attest that the legal person

ACASTI PHARMA INC.

has modified its articles pursuant to the Business Corporations Act (Québec) to integrate the changes outlined in the attached articles.

October 8, 2015

Filed with the register on October 8, 2015 under the Québec Registration Number 1160589793.

(Signed) Registraire des entreprises

Registraire des entreprises

REZ-909 (2012-11)

Québec Enterprise Number:

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Articles of Amendment

Business Corporations Act (Québec)

1Information about the business

ACASTI PHARMA INC.

Version(s) of the name of the corporation in any other language other than French, if applicable

2Amendment to Articles

2.1 Amendment to Name Name of the Corporation

2.2 Other Amendments

See attached Schedule

2.3. Date and Time of certificate, if applicable

Date: Time:

3Correction of Articles

4Signature

Last name and first name of the authorized officer or director:

Jean-Daniel Bélanger

Electronic signature of:

Jean-Daniel Bélanger

Reserved for the administration Reference number of request: 020200032928418 Numeric designation:

SCHEDULE

As of the date of the issuance of a Certificate of Amendment confirming the present Articles of Amendment, all of the issued and outstanding Class "A" Shares ("**Common Shares**") in the capital of the Corporation are consolidated (the "**Consolidation**") on the basis of one (1) post-Consolidation Common Share for every ten (10) pre-Consolidation Common Shares (provided that each fractional Common Share that results from the Consolidation shall be rounded up to the nearest whole number).

CERTIFICATE OF AMENDMENT

Business Corporations Act (CQLR, chapter S-31.1)

I attest that the legal person

ACASTI PHARMA INC.

has modified its articles pursuant to the Business Corporations Act (Québec) to integrate the changes outlined in the attached articles.

October 8, 2014

Filed with the register on October 15, 2014 under the Québec Registration Number 1160589793.

(Signed) Registraire des entreprises

Registraire des entreprises

REZ-909 (2012-11)

Page 1 of 1

Articles of Amendment

Business Corporations Act (Québec)

1Information about the business

ACASTI PHARMA INC.

Version(s) of the name of the corporation in any other language other than French, if applicable

2Amendment to Articles

2.1 Amendment to Name Name of the Corporation

2.2 Other Amendments

Increase the maximum number of directors from 9 to 10.

2.3. Date and Time of certificate, if applicable

Date: Time:

3Correction of Articles

4Signature

Last name and first name of the authorized officer or director:

Jean-Daniel Bélanger

Electronic signature of:

Jean-Daniel Bélanger

Reserved for the administration Reference number of request: 020200024512385 Numeric designation:

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Québec Enterprise Number: 1160589793

CERTIFICATE OF AMENDMENT

Business Corporations Act (CQLR, chapter S-31.1)

I attest that the legal person

ACASTI PHARMA INC.

has modified its articles pursuant to the Business Corporations Act (Québec) to integrate the changes outlined in the attached articles.

November 1, 2013

Filed with the register on November 1, 2013 under the Québec Registration Number 1160589793.

(Signed) Registraire des entreprises

Registraire des entreprises

REZ-909 (2012-11)

Québec Enterprise Number:

Page 1 of 1

1160589793

Articles of Amendment

Business Corporations Act (Québec)

1Information about the business

ACASTI PHARMA INC.

Version(s) of the name of the corporation in any other language other than French, if applicable

2Amendment to Articles

2.1 Amendment to Name Name of the Corporation

Version(s) of the name of the corporation in any other language other than French, if applicable

2.2 Other Amendments

See Schedule Attached.

2.3. Date and Time of certificate, if applicable

Date: Time:

3Correction of Articles

4Signature

Last name and first name of the authorized officer or director: Henri Harland

Electronic signature of:

Henri Harland

Reserved for the administration Reference number of request: 02020017794499 Numeric designation:

ACASTI PHARMA INC.

SCHEDULE

•Schedule B-2 of the articles of amendment, evidenced by the certificate dated November 7, 2008, is repealed in its entirety and replaced by the attached Schedule B-3.

•The minimum number of directors is increased from 1 to 3.

SCHEDULE B-3

OTHER PROVISIONS

BORROWING POWERS

1. Unless otherwise provided in the by-laws or in a unanimous shareholder agreement, the board of directors of a corporation may, on behalf of the Corporation:

- (i) borrow money;
- (ii) issue, reissue, sell or hypothecate its debt obligations;
- (iii) enter into a suretyship to secure performance of an obligation of any person; and
- (iv) hypothecate all or any of its property, owned or subsequently acquired, to secure any obligation.

ANNUAL MEETING OF SHAREHOLDERS

2. The annual meeting of the shareholders may be held at any place, in or outside of the Province of Québec, as may be determined by the directors.

ADDITIONAL DIRECTORS

3. The directors may appoint one or more additional directors within the limits prescribed under the Business Corporations Act (Québec).

UNOFFICIAL TRANSLATION PREPARED BY OSLER

[Québec]

CERTIFICATE OF AMENDMENT

Companies Act, Part IA (C.Q.L.R., c. C-38)

I hereby certify that the company

ACASTI PHARMA INC.

has modified its articles on NOVEMBER 7, 2008, pursuant to Part IA of the Companies Act, as indicated in the attached Articles of Amendment.

[Seal of the Registraire des entreprises du Québec]Filed with the register on November 10, 2008 under Québec business number 1160589793

> *(signed)* Québec Corporate Registraire

1Name Indicate the new name of the company is it has been modified and indicate the former name in Section 5 or

Indicate the current name of the company if you wish to conserve it and indicate N/A in Section 5

ACASTI PHARMA INC.

Indicate an "X" if you are requesting a numerical designation (numbered company) in lieu of a name

2The articles of the company are modified in the following manner:

The Schedule B-1 of the Articles of amendment of the company dated August 7, 2008 be and it is hereby repealed and replaced by Schedule B-2 attached hereto.

3Effective date (if different from the date of filing the articles of amendment) for the requests not indicated in Section 4
Posterior date to the filing

4Amendment to articles pursuant to section 123.140 et al. of the Companies Act

Indicate an "X" if the request of modification is presented to correct an illegality, irregularity or to indicate a provision required under the Companies Act:

that does not infringe the rights of the shareholders or the creditors (art. 123.140)
that can infringe the rights of the shareholders or the creditors – attach a copy of the judgement

Effective date (the modification will be retroactive to the date of the certificate that accompanies the articles that are modified, unless the current articles or judgement do not mention a future date

5Previous name to the amendment (if different to the one mentioned in Section 1)

Reserved for the administration

Government of Québec Filed on

NOVEMBER 7, 2008 Signature of authorized signatory

Québec Corporate

This Schedule has been repealed and replaced pursuant to the Articles of Amendment dated November 1, 2013<u>SCHEDULE B 2</u>

6.3. BORROWING POWERS

The Board of Directors may, by resolution and without the approval of the shareholders:

- 6.3.1. Borrow money, taking into account the credit of the Company;
- 6.3.2. Issue, reissue, sell or pledge the Company's debt instruments;
- 6.3.3. Subject to section 123.66 of the *Companies Act* (Quebec), guarantee in the name of the Company the execution of an obligation of which another person is responsible.
- 6.3.4. Delegate one or many of the aforementioned powers to a director, a committee of directors or to an officer of the Company.

UNOFFICIAL TRANSLATION PREPARED BY OSLER

[Québec]

CERTIFICATE OF AMENDMENT

Companies Act, Part IA (C.Q.L.R., c. C-38)

I hereby certify that the company

ACASTI PHARMA INC.

has modified its articles on AUGUST 7, 2008, pursuant to Part IA of the Companies Act, as indicated in the attached Articles of Amendment.

[Seal of the Registraire des entreprises du Québec]Filed with the register on August 8, 2008 under Québec business number 1160589793

> *(signed)* Québec Corporate Registraire

Année

Mois Jour

1Name Indicate the new name of the company is it has been modified and indicate the former name in Section 5 or

Indicate the current name of the company if you wish to conserve it and indicate N/A in Section 5

ACASTI PHARMA INC.

Indicate an "X" if you are requesting a numerical designation (numbered company) in lieu of a name

2The articles of the company are modified in the following manner:

1. COMPANY NAME

The designating number of the company is repealed and replaced with the following company name:

ACASTI PHARMA INC.

2. DESCRIPTION OF SHARE CAPITAL

Schedules 1, 2 and 3 of the share capital of the company dated February 1, 2002 are repealed and replaced by Schedules A-1 and B-1 attached hereto.

3Effective date (if different from the date of filing the articles of amendment) for the requests not indicated in Section 4

Posterior date to the filing

4Amendment to articles pursuant to section 123.140 et al. of the Companies Act

Indicate an "X" if the request of modification is presented to correct an illegality, irregularity or to indicate a provision required under the Companies Act:

that does not infringe the rights of the shareholders or the creditors (art. 123.140)
that can infringe the rights of the shareholders or the creditors – attach a copy of the judgement

Effective date (the modification will be retroactive to the date of the certificate that accompanies the articles that are modified, unless the current articles or judgement do not mention a future date

5Previous name to the amendment (if different to the one mentioned in Section 1)

9113-0310 QUÉBEC INC.

Reserved for the administration

Government of Québec Filed on

AUGUST 7, 2008

Signature of authorized signatory

- 25 -<u>SCHEDULE A-1</u>

5. DESCRIPTION OF THE SHARE CAPITAL OF THE COMPANY

The authorized share capital of the Company is composed of an unlimited number of Class "A", "B", "C", "D" and "E" shares, with the following privileges and restrictions:

5.1CLASS "A" SHARES

Holders of Class "A" shares:

<u>Vote</u>

5.1.1Shall have the right to vote at any meeting of the shareholders of the Company. Each Class "A" share confers one (1) vote per share.

Dividends

5.1.2Shall have the right to receive, during each financial year and out of the funds which can legally serve this purpose, a dividend, of which the amount, declaration and payment thereof is left to the discretion of the Directors, subject to the order of priority defined in section 5.6.

Liquidation or dissolution

5.1.3In the event of the dissolution or the liquidation of the Company or any other distribution of its property, shall have the right to share in the remaining property of the Company, subject to the order of priority defined in section 5.6.

Participation

5.1.4Shall participate in the profits or surplus assets of the Company.

5.2CLASS "B" SHARES

Holders of Class "B" shares:

<u>Vote</u>

5.2.1Shall have the right to vote at any meeting of the shareholders of the Company. Each Class "B" share confers ten (10) votes per share.

Dividends

5.2.2Shall have the right to receive, as and when such dividends are declared, an annual non-cumulative dividend of five percent (5%) on the amount paid for the said

shares, payable at the time and in the manner which the Directors may determine and subject to the order of priority as defined in section 5.6.

Conversion at the discretion of the holder

5.2.3Shall have the right, starting January 1st, 2009, at their entire discretion, to convert, part or all of the Class "B" shares they hold in Class "A" shares on the basis of one Class "A" share for each Class "B" share converted pursuant hereto.

To exercise its conversion right, a shareholder must remit to the Company's head office a written notice indicating the number of shares which must be converted by the Company as well as the date of the conversion. This notice must be accompanied by the share certificate(s) representing the shares which will be converted and must bear the signature of the person registered on the Company's registers as the holder of these shares or the signature of a duly authorized proxy. Upon receipt of the notice and the share certificate(s) representing the shares to be converted, the Company will dispose of fifteen (15) days to remit the new Class "A" share certificates to the shareholder. A shareholder may not claim a right as a shareholder of the converted class of shares as of the date upon which the Company shall have issued the new share certificates following the exercise of the conversion.

If part of the shares held by a shareholder are converted pursuant hereto, the Company shall, free of charge, issue to the concerned shareholder a new share certificate representing the non-converted shares.

The shares converted pursuant hereto at the request of a shareholder will be automatically cancelled at the date of issuance of the new Class "A" shares issued following the conversion and the Company shall, as required, reduce or increase accordingly the subdivision of the issued and paid share capital relating to said shares, the whole in accordance with the provisions of the law.

Redemption

5.2.4Subject to the provisions of the Companies Act (Quebec) and the order of priority defined in section 5.6, have the right to demand from the Company, upon a thirty (30) day written notice, that the latter redeem the Class "B" shares that are held by the shareholder(s) at a price equivalent to the amount paid for said shares plus the redemption premium as defined in subsection 5.2.4.1, and any and all declared but yet unpaid dividends on same. In the event of partial redemption, such redemption shall be made in proportion with the number of outstanding Class "B" shares, without taking into account share fractions.

5.2.4.1The Class "B" share redemption premium shall be equivalent to the difference between the amount paid for said shares and the fair market value of the consideration received at the time of issuance of same. Subject to the provisions of subsection 5.2.4.2, the fair market value shall be determined by the Board of directors of the Company in accordance with generally accepted accounting principles and its decision shall be final, binding and without appeal.

5.2.4.2Should the competent tax authorities evaluate the fair market value of the transferred property in a different manner, and, following a final negotiation or a judgment rendered by a court of competent jurisdiction on the matter, the fair market value thus obtained is different from the value established in subsection 5.2.4.1, it is understood that, in the event the fair market value is increased, the said premium shall be increased to match the difference, and that, in the event the fair market value is reduced, the premium shall be reduced to take into account such difference.

5.2.4.3If, between the date of issuance of the Class "B" shares and the date at which the premium is adjusted as mentioned in subsection 5.2.4.2, some Class "B" shares of the share capital of the Company have been redeemed, the shareholders at the time of redemption will have to, at the date of adjustment, make a cash payment to the Company or the Company will have to, at such date, make a cash payment to said shareholders, as the case may be, equal to the difference between the amount paid at the time of the redemption of the shares and the amount that should have been paid to the shareholders if the adjustment had been taken into consideration.

5.2.4.4Furthermore, if dividends have been paid by the Company on some Class "B" shares between the date of issuance of the Class "B" shares and the date at which the premium is adjusted according to subsection 5.2.4.2, the Company will have to, at the date of adjustment, make a cash payment to the holders of Class "B" shares at the time the dividend was paid, or said Class "B" shareholders will have to, at the same date, make a cash payment to the Company, in order to compensate the other party for the insufficiency of the paid dividends or the overpayment of said dividends, as the case may be, stemming from the fact that the redemption premium has been modified.

Purchase

5.2.5Subject to the provisions of the Companies Act (Quebec), the Company may, when it so deems advisable, without notice and without taking into account any other classes of shares, purchase by mutual agreement, at the best possible price, all or part of the outstanding Class "B" shares, which price shall not exceed, in any way, the aforementioned redemption price.

Liquidation or dissolution

5.2.6In the event of the dissolution or liquidation of the Company or any other distribution of its property, shall have the right to be reimbursed for the amount paid on Class "B" shares plus the redemption premium as defined in subsection 5.2.4.1 as well as the amount of any and all declared but yet unpaid dividends on said shares, subject to the order of priority defined in section 5.6.

Participation

5.2.7Subject to the provisions of subsection 5.2.2, shall not have the right to participate in the profits or surplus assets of the Company.

Holders of Class "C" shares:

Vote

5.3.1Subject to the provisions of the Companies Act (Quebec), shall neither be entitled to vote at any meeting of the shareholders of the Company, nor to receive a notice of such meeting nor to attend any such meeting.

Dividends

5.3.2Shall have the right to receive, as and when such dividends are declared, an annual non-cumulative dividend of five percent (5%) on the amount paid for the said shares, plus a redemption premium as defined in subsection 5.3.6.1, payable at the time and in the manner which the Directors may determine and subject to the order of priority as defined in section 5.6.

Participation

5.3.3Subject to the provisions of subsection 5.3.2, shall not have the right to participate in the profits or surplus assets of the Company.

Conversion at the discretion of the holder

5.3.4Shall have the right, starting January 1st, 2009, at their entire discretion, to convert, part or all of the Class "C" shares they hold in Class "A" shares on the basis of one Class "A" share for each Class "C" share converted pursuant hereto.

To exercise its conversion right, a shareholder must remit to the Company's head office a written notice indicating the number of shares which must be converted by the Company as well as the date of the conversion. This notice must be accompanied by the share certificate(s) representing the shares which will be converted and must bear the signature of the person registered on the Company's registers as the holder of these shares or the signature of a duly authorized proxy. Upon receipt of the notice and the share certificate(s) representing the shares to be converted, the Company will dispose of fifteen (15) days to remit the new Class "A" share certificates to the shareholder. A shareholder may not claim a right as a shareholder of the converted class of shares as of the date upon which the Company shall have issued the new share certificates following the exercise of the conversion.

If part of the shares held by a shareholder are converted pursuant hereto, the Company shall, free of charge, issue to the concerned shareholder a new share certificate representing the non-converted shares.

The shares converted pursuant hereto at the request of a shareholder will be automatically cancelled at the date of issuance of the new Class "A" shares issued following the conversion and the Company shall, as required, reduce or increase

accordingly the subdivision of the issued and paid share capital relating to said shares, the whole in accordance with the provisions of the law.

Forced conversion

5.3.5All of the Company's Class "C" shares shall automatically be converted in Class "A" shares upon the request of an unrelated third party investor in the Company, investing more than \$500,000, or any other amount to be determined by the Board of Directors of the Company, in the Company and requesting as a condition to the investment that the Class "C" shares be converted into Class "A" shares on the basis of one Class "A" share for each Class "C" share converted pursuant hereto.

In such case, the Company shall send a notice to the holders of Class "C" shares requesting the share certificate(s) representing the shares which will be converted. Upon receipt of the share certificate(s) representing the shares to be converted, the Company will dispose of fifteen (15) days to remit the new Class "A" share certificates to the shareholders. A shareholder may not claim a right as a shareholder of the converted class of shares as of the date upon which the Company shall have issued the new share certificates following the exercise of the conversion.

The shares converted pursuant hereto will be automatically cancelled at the date of issuance of the new Class "A" shares issued following the conversion and the Company shall, as required, reduce or increase accordingly the subdivision of the issued and paid share capital relating to said shares, the whole in accordance with the provisions of the law.

Redemption

5.3.6Subject to the provisions of the Companies Act (Quebec) and the order of priority defined in section 5.6, have the right to demand from the Company, upon a thirty (30) day written notice, that the latter redeem the Class "C" shares that are held by the shareholder(s) at a price equivalent to the amount paid for said shares plus the redemption premium as defined in subsection 5.3.6.1, and any and all declared but yet unpaid dividends on same. In the event of partial redemption, such redemption shall be made in proportion with the number of outstanding Class "C" shares, without taking into account share fractions.

5.3.6.1The Class "C" share redemption premium shall be equivalent to the difference between the amount paid for said shares and the fair market value of the consideration received at the time of issuance of same. Subject to the provisions of subsection 5.3.6.2, the fair market value shall be determined by the Board of directors of the Company in accordance with generally accepted accounting principles and its decision shall be final, binding and without appeal.

5.3.6.2Should the competent tax authorities evaluate the fair market value of the transferred property in a different manner, and, following a final negotiation or a judgment rendered by a court of competent jurisdiction on the matter, the fair market value thus obtained is different from the value established in subsection

5.3.6.1, it is understood that, in the event the fair market value is increased, the said premium shall be increased to match the difference, and that, in the event the fair market value is reduced, the premium shall be reduced to take into account such difference.

5.3.6.3If, between the date of issuance of the Class "C" shares and the date at which the premium is adjusted as mentioned in subsection 5.3.6.2, some Class "C" shares of the share capital of the Company have been redeemed, the shareholders at the time of redemption will have to, at the date of adjustment, make a cash payment to the Company or the Company will have to, at such date, make a cash payment to said shareholders, as the case may be, equal to the difference between the amount paid at the time of the redemption of the shares and the amount that should have been paid to the shareholders if the adjustment had been taken into consideration.

5.3.6.4Furthermore, if dividends have been paid by the Company on some Class "C" shares between the date of issuance of the Class "C" shares and the date at which the premium is adjusted according to subsection 5.3.6.2, the Company will have to, at the date of adjustment, make a cash payment to the holders of Class "C" shares at the time the dividend was paid, or said Class "C" shareholders will have to, at the same date, make a cash payment to the Company, in order to compensate the other party for the insufficiency of the paid dividends or the overpayment of said dividends, as the case may be, stemming from the fact that the redemption premium has been modified.

Purchase

5.3.7Subject to the provisions of the Companies Act (Quebec), the Company may, when it so deems advisable, without notice and without taking into account any other classes of shares, purchase by mutual agreement, at the best possible price, all or part of the outstanding Class "C" shares, which price shall not exceed, in any way, the aforementioned redemption price.

Liquidation or dissolution

5.3.8In the event of the dissolution or liquidation of the Company or any other distribution of its property, shall have the right to be reimbursed for the amount paid on Class "C" shares plus the redemption premium as defined in subsection 5.3.6.1 as well as the amount of any and all declared but yet unpaid dividends on said shares, subject to the order of priority defined in section 5.6.

5.4CLASS "D" SHARES_

Holders of Class "D" shares:

5.4.1Subject to the provisions of the Companies Act (Quebec), shall neither be entitled to vote at any meeting of the shareholders of the Company, nor to receive a notice of such meeting nor to attend any such meeting.

Dividends

5.4.2Shall have the right to receive, as and when such dividends are declared, a monthly variable non-cumulative dividend of half of one percent to two percent (0.5% to 2%) on the amount paid for the said shares, plus a redemption premium as defined in subsection 5.4.6.1, payable at the time and in the manner which the Directors may determine and subject to the order of priority as defined in section 5.6.

Participation

5.4.3 Subject to the provisions of subsection 5.4.2, shall not have the right to participate in the profits or surplus assets of the Company.

Conversion at the discretion of the holder

5.4.4Shall have the right, starting January 1st, 2009, at their entire discretion, to convert, part or all of the Class "D" shares they hold in Class "A" shares on the basis of a number of Class "A" shares equal to the number of Class "D" shares converted pursuant hereto multiplied by the conversion ratio, calculated as follows:

| Conversion Ratio = The average amount paid per share for the Class "D" shares plus the redemption premium per share as defined in subsection 5.4.6.1 as well as the amount of any and all declared but yet unpaid dividends per said shares | Х | A factor to be agreed at the time of the issuance of the Class "D" shares |
|--|---|--|
|--|---|--|

Fair Market Value of the Class "A" shares at the date of any conversion of Class "D" shares in Class "A" shares

To exercise its conversion right, a shareholder must remit to the Company's head office a written notice indicating the number of shares which must be converted by the Company as well as the date of the conversion. This notice must be accompanied by the share certificate(s) representing the shares which will be converted and must bear the signature of the person registered on the Company's registers as the holder of these shares or the signature of a duly authorized proxy. Upon receipt of the notice and the share certificate(s) representing the shares to be converted, the Company will dispose of fifteen (15) days to remit the new Class "A" share certificates to the shareholder. A shareholder may not claim a right as a

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shareholder of the converted class of shares as of the date upon which the Company shall have issued the new share certificates following the exercise of the conversion.

If part of the shares held by a shareholder are converted pursuant hereto, the Company shall, free of charge, issue to the concerned shareholder a new share certificate representing the non-converted shares.

The shares converted pursuant hereto at the request of a shareholder will be automatically cancelled at the date of issuance of the new Class "A" shares issued following the conversion and the Company shall, as required, reduce or increase accordingly the subdivision of the issued and paid share capital relating to said shares, the whole in accordance with the provisions of the law.

Forced conversion

5.4.5All of the Company's Class "D" shares shall automatically be converted in Class "A" shares upon the request of an unrelated third party investor in the Company, investing more than \$500,000, or any other amount to be determined by the Board of Directors of the Company, in the Company and requesting as a condition to the investment that the Class "D" shares be converted into Class "A" shares on the basis of a number of Class "A" shares equal to the number of Class "D" shares converted pursuant hereto multiplied by the conversion ratio, calculated as follows:

| Conversion Ratio =The average amount paid per share for the Class "D" shares plus the redemption premium per share as defined in subsection 5.4.6.1 as well as the amount of any and all declared but yet unpaid dividends per said shares | Х | A factor to be agreed at the time of the issuance of the Class "D" shares |
|---|---|--|
|---|---|--|

Fair Market Value of the Class "A" shares at the date of any conversion of Class "D" shares in Class "A" shares

In such case, the Company shall send a notice to the holders of Class "D" shares requesting the share certificate(s) representing the shares which will be converted. Upon receipt of the share certificate(s) representing the shares to be converted, the Company will dispose of fifteen (15) days to remit the new Class "A" share certificates to the shareholders. A shareholder may not claim a right as a shareholder of the converted class of shares as of the date upon which the Company shall have issued the new share certificates following the exercise of the conversion.

The shares converted pursuant hereto will be automatically cancelled at the date of issuance of the new Class "A" shares issued following the conversion and the Company shall, as required, reduce or increase accordingly the subdivision of the

issued and paid share capital relating to said shares, the whole in accordance with the provisions of the law.

Redemption

5.4.6Subject to the provisions of the Companies Act (Quebec) and the order of priority defined in section 5.6, have the right to demand from the Company, upon a thirty (30) day written notice, that the latter redeem the Class "D" shares that are held by the shareholder(s) at a price equivalent to the amount paid for said shares plus the redemption premium as defined in subsection 5.4.6.1, and any and all declared but yet unpaid dividends on same. In the event of partial redemption, such redemption shall be made in proportion with the number of outstanding Class "D" shares, without taking into account share fractions.

5.4.6.1 The Class "D" share redemption premium shall be equivalent to the difference between the amount paid for said shares and the fair market value of the consideration received at the time of issuance of same. Subject to the provisions of subsection 5.4.6.2, the fair market value shall be determined by the Board of directors of the Company in accordance with generally accepted accounting principles and its decision shall be final, binding and without appeal.

5.4.6.2Should the competent tax authorities evaluate the fair market value of the transferred property in a different manner, and, following a final negotiation or a judgment rendered by a court of competent jurisdiction on the matter, the fair market value thus obtained is different from the value established in subsection 5.4.6.1, it is understood that, in the event the fair market value is increased, the said premium shall be increased to match the difference, and that, in the event the fair market value is reduced, the premium shall be reduced to take into account such difference.

5.4.6.3If, between the date of issuance of the Class "D" shares and the date at which the premium is adjusted as mentioned in subsection 5.4.6.2, some Class "D" shares of the share capital of the Company have been redeemed, the shareholders at the time of redemption will have to, at the date of adjustment, make a cash payment to the Company or the Company will have to, at such date, make a cash payment to said shareholders, as the case may be, equal to the difference between the amount paid at the time of the redemption of the shares and the amount that should have been paid to the shareholders if the adjustment had been taken into consideration.

5.4.6.4Furthermore, if dividends have been paid by the Company on some Class "D" shares between the date of issuance of the Class "D" shares and the date at which the premium is adjusted according to subsection 5.4.6.2, the Company will have to, at the date of adjustment, make a cash payment to the holders of Class "D" shares at the time the dividend was paid, or said Class "D" shareholders will have to, at the same date, make a cash payment to the Company, in order to compensate the other party for the insufficiency of the paid dividends or the overpayment of said

dividends, as the case may be, stemming from the fact that the redemption premium has been modified.

Purchase

5.4.7Subject to the provisions of the Companies Act (Quebec), the Company may, when it so deems advisable, without notice and without taking into account any other classes of shares, purchase by mutual agreement, at the best possible price, all or part of the outstanding Class "D" shares, which price shall not exceed, in any way, the aforementioned redemption price.

Liquidation or dissolution

5.4.8In the event of the dissolution or liquidation of the Company or any other distribution of its property, shall have the right to be reimbursed for the amount paid on Class "D" shares plus the redemption premium as defined in subsection 5.4.6.1 as well as the amount of any and all declared but yet unpaid dividends on said shares, subject to the order of priority defined in section 5.6.

5.5CLASS "E" SHARES

Holders of Class "E" shares:

Vote

5.5.1Subject to the provisions of the Companies Act (Quebec), shall neither be entitled to vote at any meeting of the shareholders of the Company, nor to receive a notice of such meeting nor to attend any such meeting.

Dividends

5.5.2Shall have the right to receive, as and when such dividends are declared, a monthly variable non-cumulative dividend of half of one percent to two percent (0.5% to 2%) on the amount paid for said shares, payable at a time and in the manner in which the Directors may determine and subject to the order of priority as defined in section 5.6.

Participation

5.5.3Subject to the provisions of subsection 5.5.2, shall not participate in the profits or surplus assets of the Company.

Redemption

5.5.4Subject to the provisions of the Companies Act (Quebec) and the order of priority defined in section 5.6 hereof, the Company shall have the right to redeem, upon a thirty (30) day written notice, the Class "E" shares that are held by the shareholder(s) at a price equivalent to the amount paid on said shares and any and

all declared but yet unpaid dividends on same. In the event of partial redemption, such redemption shall be made in proportion with the number of outstanding Class "E" shares, without taking into account share fractions.

Conversion at the discretion of the holder

5.5.5Shall have the right, at their entire discretion, to convert, part or all of the Class "E" shares they hold in Class "A" shares on the basis of a number of Class "A" shares equal to the number of Class "E" shares converted pursuant hereto multiplied by the conversion ratio, calculated as follows:

| Conversion | The average amount paid per share for the Class | Х | A factor to be agreed at the time of |
|------------|---|---|--------------------------------------|
| Ratio = | "E" shares plus the amount of any and all | | the issuance of the Class "E" shares |
| | declared but yet unpaid dividends per said shares | | |

Fair Market Value of the Class "A" shares at the date of any conversion of Class "E" shares in Class "A" shares

To exercise its conversion right, a shareholder must remit to the Company's head office a written notice indicating the number of shares which must be converted by the Company as well as the date of the conversion. This notice must be accompanied by the share certificate(s) representing the shares which will be converted and must bear the signature of the person registered on the Company's registers as the holder of these shares or the signature of a duly authorized proxy. Upon receipt of the notice and the share certificate(s) representing the shares to be converted, the Company will dispose of fifteen (15) days to remit the new Class "A" share certificates to the shareholder. A shareholder may not claim a right as a shareholder of the converted class of shares as of the date upon which the Company shall have issued the new share certificates following the exercise of the conversion.

If part of the shares held by a shareholder are converted pursuant hereto, the Company shall, free of charge, issue to the concerned shareholder a new share certificate representing the non-converted shares.

The shares converted pursuant hereto at the request of a shareholder will be automatically cancelled at the date of issuance of the new Class "A" shares issued following the conversion and the Company shall, as required, reduce or increase accordingly the subdivision of the issued and paid share capital relating to said shares, the whole in accordance with the provisions of the law.

Purchase

5.5.6Subject to the provisions of the Companies Act (Quebec), the Company may, when it so deems advisable, without notice and without taking into account any other classes of shares, purchase by mutual agreement, at the best possible price, all or part of the outstanding Class "E" shares.

Liquidation or dissolution

5.5.7In the event of the dissolution or the liquidation of the Company or any other distribution of its property, shall have the right to be reimbursed for the amount paid on Class "E" shares as well as the amount of any and all declared yet unpaid dividends on said shares, subject to the order of priority defined in section 5.6.

5.6ORDER OFPRIORITY

The order of priority applicable to all classes of shares of the Company with respect to the redemption, liquidation, dissolution or distribution of property is as follows:

Firstly, the Class "E" shares;

Secondly, the Class "D" shares;

Thirdly, the Class "B" and "C" shares, pari passu; Fourthly, the Class "A" shares.

Notwithstanding the above-mentioned order of priority, shareholders of a class of shares may renounce to the abovementioned order of priority by unanimous approval by all shareholders of said class of shares.

5.7CONVERSION OF SHARES

The issued and outstanding Class "A" shares of the share capital of the Company prior to the amendment are converted as follows:

The One Hundred (100) Class A shares of the issued and outstanding share capital of the Company, prior to this amendment, are converted into One Hundred (100) Class A shares, for a total stated capital of One Hundred Dollars (\$ 100).

This Schedule has been repealed and replaced pursuant to the Articles of Amendment dated November 7, 2008 6. RESTRICTION ON SECURITIES TRANSFERS

- 5.1 Subject to subsection 6.2, no securities of the Company, other than nonconvertible debt securities, can be transferred without:
- 5.1.1 The approval of the Directors of the Company. Such approval must be in written form duly signed by the majority of the Directors or by resolution of the Board ofDirectors; or
- 5.1.2. The approval of the Shareholders of the Company. Such approval must be in written form duly signed by the holder(s) of the majority of the outstanding shares of the share capital of the Company or by resolution of the Shareholders.
- 5.2. There shall be no restrictions on the transfer of securities following the death of a shareholder.

6.3 BORROWING POWERS

The Board of Directors may, by resolution and without the approval of the shareholders:

- 6.3.1. Borrow money, taking into account the credit of the Company;
- 6.3.2. Issue, reissue, sell or pledge the Company's debt instruments;
- 5.3.3. Subject to section 123.66 of the *Companies Act* (Quebec), guarantee in the name of the Company the execution of an obligation of which another person is responsible.
- 5.3.4. Delegate one or many of the aforementioned powers to a director, a committee of directors or to an officer of the Company.

UNOFFICIAL TRANSLATION PREPARED BY OSLER

[Québec]

CERTIFICATE OF CONSTITUTION

Companies Act, Part IA (C.Q.L.R., c. C-38)

I hereby certify that the company

9113-0310 QUÉBEC INC.

was constituted on FEBRUARY 1, 2002, pursuant to Part IA of the Companies Act, as indicated in the attached Articles of Constitution.

[Seal of the Registraire des entreprises du Québec]Filed with the register on February 6, 2002 under Québec business number 1160589793

> *(signed)* General inspector of financial institutions

| 1Name of the company 9113-0310 QUÉBEC INC. 2Judicial district of Québec where the company's head office is located | | | | | | |
|--|---|---|--|--|--|--|
| 2Judicial district of Québec where the company's head | | | | | | |
| | | | | | | |
| | 3Exact number or minimal and maximal number of directors | 4Effective date if later than filing date | | | | |
| Laval | | | | | | |
| | Minimum 1 Maximum 9 | | | | | |
| 5Description of share capital | | | | | | |
| See Schedule 1 | | | | | | |
| | | | | | | |
| 6Restrictions, if any, on share transfers | | | | | | |
| See Schedule 2 | | | | | | |
| 7Restrictions, if any, on the business the company may of | carry on | | | | | |
| N/A | - | | | | | |
| | | | | | | |
| 80ther provisions | | | | | | |
| See Schedule 3 | | | | | | |
| 9Founders | | | | | | |
| Full name | Address, including postal code (if it is a corporation, include head office and act of incorporation) | Signature of each founder (if it is a corporation, signature of the signing officer) | | | | |
| Julie Paquette | 1080, Beaver Hall Hill Montréal, Québec, H2Z 1S8 | (signed) | | | | |
| | | | | | | |

If space is insufficient, please attach a schedule in duplicate.

Reserved for the administration

Government of Québec Filed on

FEBRUARY 1, 2002

General Inspector of Financial institutions

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Form 1

Part 1A

ARTICLES OF CONSTITUTION

Companies Act, C.Q.L.R., c. C-38

- 41 -SCHEDULE 1

DESCRIPTION OF SHARE CAPITAL

This Schedule has been repealed and replaced pursuant to the Articles of Amendment dated August 7, 2008

- 42 -SCHEDULE 2

RESTRICTIONS ON SHARE TRANSFERS

This Schedule has been repealed and replaced pursuant to the Articles of Amendment dated August 7, 2008

- 43 -SCHEDULE 3

OTHER PROVISIONS

This Schedule has been repealed and replaced pursuant to the Articles of Amendment dated August 7, 2008

Montréal

Toronto

Calgary

Ottawa

Vancouver

New York osler.com

> Osler, Hoskin & Harcourt Ilp 1000 De La Gauchetière Street West Suite 2100 Montréal, Québec, Canada H3B 4W5 514.904.8100 main 514.904.8101 facsimile



Exhibit 5.1

October 6, 2023

Acasti Pharma Inc.

2572 boul. Daniel-Johnson, 2nd Floor Laval, Québec, Canada H7T 2R3

Dear Sirs/Mesdames:

Re: Acasti Pharma Inc. - Registration Statement on Form S-3

We have acted as Canadian counsel to Acasti Pharma Inc. (the "**Corporation**"), a corporation governed by the *Business Corporations Act* (*Québec*), in connection with the Registration Statement on Form S-3 (the "**Registration Statement**") filed by the Corporation on the date hereof with the Securities and Exchange Commission (the "**SEC**") relating to the proposed offering and resale by the selling shareholders identified in the prospectus included in the Registration Statement (the "**Prospectus**") of up to an aggregate of 6,594,615 common shares of the Corporation, which are comprised of (i) 1,951,371 common shares (the "**Shares**"), (ii) 2,106,853 common shares (the "**Pre-Funded Warrant Shares**") issuable upon the exercise of pre-funded warrants (the "**Pre-Funded Warrants**"), and (iii) 2,536,391 common shares (the "**Common Warrant Shares**" and together with the Pre-Funded Warrants, the "**Warrant Shares**") issuable upon the exercise of common warrants ("**Common Warrants**" and together with the Pre-Funded Warrants, the "**Warrant Shares**"), each issued and sold to accredited investors in a private placement that closed on September 25, 2023.



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We have examined the Registration Statement, the Prospectus, the Warrants and all such corporate and public records, statutes and regulations and have made such investigations and have reviewed such other documents as we have deemed relevant and necessary and have considered such questions of law as we have considered relevant and necessary in order to give the opinions hereinafter set forth. As to various questions of fact material to such opinions which were not independently established, we have relied upon a certificate of an officer of the Corporation.

We are qualified to practice law in the Province of Québec and these opinions are rendered solely with respect to the Province of Québec and the federal laws of Canada applicable in the Province of Québec.

We have also assumed (a) the legal capacity of all individuals, the genuineness of all signatures, the veracity of the information contained therein, the authenticity of all documents submitted to us as originals and the conformity to authentic or original documents of all documents submitted to us as certified, conformed, electronic, photostatic or facsimile copies and (b) the completeness, truth and accuracy of all facts set forth in the official public records, certificates and documents supplied by public officials or otherwise conveyed to us by public officials.

Where our opinion expressed herein refers to the Shares having been issued as being "fully-paid and non-assessable" common shares of the Corporation, such opinion assumes that all required consideration (in whatever form) has been paid or provided. No opinion is expressed as to the adequacy of any consideration received.

Our opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated. Our opinion is based on these laws as in effect on the date hereof, and we disclaim any obligation to advise you of facts, circumstances, events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein.

Based upon, subject to and limited by the foregoing, we are of the opinion that, as of the date hereof, (a) the Shares and the Warrant Shares have been duly authorized by all necessary corporate action on the part of the Corporation, (b) the Shares are validly issued, fully paid, and nonassessable and, (c) with respect to the Warrant Shares, following (i) the exercise of the Warrants in accordance with their terms and (ii) receipt by the Corporation of the consideration for the Warrant Shares specified in the Warrants, the Warrant Shares will be validly issued, fully paid, and nonassessable.

OSLER

Page 3

We consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to our firm under the caption "Legal Matters" in the Prospectus.

Yours very truly,

(signed) Osler, Hoskin & Harcourt LLP

Osler, Hoskin & Harcourt LLP

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in this Registration Statement (Form S-3) and related Prospectus of Acasti Pharma Inc. for the registration of common shares and to the incorporation by reference therein of our report dated June 23, 2023, with respect to the consolidated financial statements of Acasti Pharma Inc. included in its Annual Report (Form 10-K) for the year ended March 31, 2023, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Montreal, Canada October 6, 2023



| KPMG LLP | Telephone | (514) 840-2100 | | |
|-------------------------------|-----------|----------------|--|--|
| 600 de Maisonneuve Blvd. West | Fax | (514) 840-2187 | | |
| Suite 1500, Tour KPMG | Internet | www.kpmg.ca | | |
| Montréal (Québec) H3A 0A3 | | | | |
| Canada | | | | |

Consent of Independent Registered Public Accounting Firm

We consent to the use of our report dated June 21, 2022, with respect to the consolidated balance sheet of Acasti Pharma Inc. as of March 31, 2022, the related consolidated statements of loss and comprehensive loss, shareholders' equity and cash flows for the year ended March 31, 2022, and the related notes, incorporated herein by reference.

KPMG LLP

Montréal, Québec

October 6, 2023

KPMG LLP, an Ontario limited liability partnership and member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. KPMG Canada provides services to KPMG LLP.

Calculation of Filing Fee Tables

Form S-3

(Form Type)

Acasti Pharma Inc.

(Exact Name of Registrant as Specified in Its Charter)

Table 1: Newly Registered and Carry Forward Securities

| | Security Type | Security Class Title | Fee Calculation or Carry Forward Rule | Amount Registered (1) | Proposed Maximum Offering Price per Share (2) | Maximum Aggregate Offering Price (1) | Fee Rate | Amount of Registration Fee | Carry Forward Form Type | Carry Forward File Number | Carry Forward Initial Effective Date | Filing Fee Previously Paid in Connection with Unsold Securities to be Carried Forward |
|--------------------------|--|--|---|--------------------------|---|---|----------------------------|------------------------------------|-------------------------------|------------------------------------|---|--|
| | | | | | Newly Regis | tered Securities | | | | | | |
| Fees to be Paid | Equity | Common Shares, no par value per share | Rule 457(c) | 6,594,615 | \$2.68 | \$17,673,568.20 | \$147.60 per million | \$2,608.62 | - | - | | - |
| Fees Previously Paid | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | | | Carry Forw | ard Securities | | | | | | |
| Carry Forward Securities | - | - | - | - | | - | | | - | - | - | - |
| | Total Offerin Total Fees Pr Total Fee Off Net Fee Due | eviously Paid | | | | \$17,673,568.20 | | \$2,608.62 - - \$2,608.62 | | | | |

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended, or the Securities Act, this registration statement also covers any additional securities that may be offered, issued or become issuable in connection with any stock split, stock dividend or similar transaction or pursuant to anti-dilution provisions of any of the securities.

(2) Estimated solely for the purpose of calculation of the registration fee pursuant to Rule 457(c) under the Securities Act based on a per share price of \$2.68, the average of the high and low reported sales prices of the registrant's common stock on the Nasdaq Capital Market on October 3, 2023.

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