ATOSSA GENETICS INC
Form S-1/A
June 25, 2012

As filed with the Securities and Exchange Commission on June 25, 2012

Registration No. 333-179500

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

Amendment No. 5 to
FORM S-1
REGISTRATION STATEMENT
UNDER THE SECURITIES ACT OF 1933

ATOSSA GENETICS INC.

(Exact name of registrant as specified in its charter)

Delaware	3841	26-4753208
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

4105 E. Madison Street, Suite 320
Seattle, Washington 98112
(206) 325-6086

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

Steven C. Quay, M.D., Ph.D.
Chairman, Chief Executive Officer and President
4105 E. Madison Street, Suite 320
Seattle, Washington 98112
(206) 325-6086

(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: As soon as practicable after the effective date of this Registration Statement.

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, check the following box. o

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. o

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 registration statement for the same offering. o

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions large accelerated filer, accelerated file, and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer o	Accelerated filer o	Non-accelerated filer o	Smaller reporting company x (Do not check if a smaller reporting company)

The registrant is an emerging growth company, as defined in Section 2(a) of the Securities Act. This Registration Statement complies with the requirements that apply to an issuer that is an emerging growth company.

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

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The information contained in this prospectus is not complete and may be changed. A registration statement relating to these securities has been filed with the Securities and Exchange Commission and these securities may not be sold until that registration statement becomes effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS **SUBJECT TO COMPLETION DATED JUNE 25, 2012**

Up to 1,000,000 Shares

This is the initial public offering of up to 1,000,000 shares of our common stock. We expect the initial public offering price will be between $5.00 and $7.00 per share. Currently, no public market exists for our securities. We have applied for listing of the shares on the NASDAQ Capital Market under the symbol ATOS .

Dawson James Securities, Inc. is the placement agent for this offering. Dawson James is not purchasing or selling any shares of common stock, nor are they required to arrange for the purchase and sale of any specific number or dollar amount of common stock, other than to use their best efforts (with no minimum) to arrange for the sale of common stock by us. We intend to close the offering within four trading days from the date of pricing of the offering. We have not arranged to place the funds from investors in an escrow, trust or similar account.

We may not complete the offering if there is a failure to satisfy any of the closing conditions required under the placement agent agreement we will enter into with Dawson James, such as the occurrence of a material adverse change or failure to obtain approval from NASDAQ to list the shares being offered in this offering.

	Per Share	Total
Public offering price	$	$
Placement agent fees*	$	$
Proceeds, before expenses, to Company	$	$

* Does not include a non-accountable expense reimbursement fee of 3% of the gross proceeds of this offering.

We are an emerging growth company under applicable Securities and Exchange Commission rules and will be subject to reduced public company reporting requirements.

Investing in these securities involves a high degree of risk.

See Risk Factors contained in this prospectus

beginning on page 10.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Delivery of the shares of common stock will be made on or about , 2012.

The date of this prospectus is , 2012.

We are an emerging growth company under applicable Securities and Exchange Commission rules and will be s

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No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus. You must not rely on any unauthorized information or representations. This prospectus is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is current only as of its date.

Unless the context requires otherwise, in this prospectus the terms we, us and our as well as the Company refer t Atossa Genetics Inc. and our wholly-owned subsidiary, National Reference Laboratory for Breast Health Inc.

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PROSPECTUS SUMMARY

This summary highlights some information from this prospectus. It may not contain all the information important to making an investment decision. You should read the following summary together with the more detailed information regarding our company and the securities being sold in this offering, including Risk Factors and Management s Discussion and Analysis of Financial Condition and Results of Operations and our financial statements and related notes, included elsewhere in this prospectus.

The Company

We are a healthcare company focused on the prevention of breast cancer through the commercialization of diagnostic tests that can detect precursors to breast cancer, and through the research, development, and ultimate commercialization of treatments for pre-cancerous lesions.

Our diagnostic tests consist of patented medical devices cleared by the Food and Drug Administration, or FDA, that can collect fluid samples from the breast milk ducts, where, according to the National Cancer Institute, over 95% of breast cancers arise. These samples are processed at our wholly-owned National Reference Laboratory for Breast Health, which has been certified pursuant to the Clinical Laboratory Improvement Amendments, or CLIA, has been licensed in the states of California, Florida, Maryland, Rhode Island, and Washington, and is in the process of obtaining a license to accept testing samples from New York (which requires out-of-state laboratories to hold a state license). CLIA certification is legally required to receive reimbursement from federal or state medical benefit programs, like Medicare and Medicaid, and is a practical requirement for most third-party insurance benefit programs. Our CLIA-certified laboratory, which is permitted to accept samples from all 50 states under its CLIA certification, its state licenses, or, in New York under recognized exemption provisions while its license application is pending, examines the specimens by microscopy for the presence of normal, pre-malignant, or malignant changes as determined by cytopathology and biomarkers that distinguish usual ductal hyperplasia, a benign condition, from atypical ductal hyperplasia, which may lead to cancer. These cytopathological results provide patients and physicians with information about the care path that should be followed, depending on the individual risk of future cancer as determined by the results.

Additionally, we are conducting research on the treatment of these pre-cancerous cells by using our patented and FDA-cleared microcatheters to deliver, directly into the milk ducts, pharmaceutical formulations that can be used to treat these pre-cancerous lesions. By using this localized delivery method, patients are expected to receive high local concentrations of these drugs at the site of the pre-cancerous lesions, potentially promoting efficacy of the treatment while limiting systemic exposure, which has the potential to lower the overall toxicity of these treatments.

We launched our commercial operations in late 2011 and, as of June 8, 2012, have enrolled and sold MASCT System kits or provided ArgusCYTE collection kits to 34 doctors and clinics as providers of the ForeCYTE and/or ArgusCYTE tests. We have received, processed, and reported the results to physicians from 276 ForeCYTE samples and 13 ArgusCYTE samples as of March 31, 2012 and 858 ForeCYTE samples and 39 ArgusCYTE samples as of June 18, 2012. When we launched operations in December 2011, we did so as part of our field experience trial to collect information about the ease or difficulty of adoption of the ForeCYTE and ArgusCYTE tests in both mammography clinics and physicians offices, the number of sales calls to receive the first orders, and the growth of sales of specimen collection kits on a monthly basis. We intend to use the data from this field experience trial to form our national marketing efforts as we scale up our commercial operations going forward. As of December 31, 2011 and March 31, 2012, we have generated $1,500 and $54,713 in revenue, respectively, from the sale of our products and

services. We incurred net operating losses of approximately $1.0 million, $1.1 million and $3.4 million for our three months ended March 31, 2012 and our fiscal years ended December 31, 2010 and 2011, respectively. As of March 31, 2012, we had an accumulated deficit of approximately $5.7 million. We have not yet established an ongoing source of revenue sufficient to cover our operating costs and allow us to continue as a going concern. Our ability to continue as a going concern is dependent on obtaining adequate capital to fund operating losses until we become profitable. We plan to obtain additional capital resources by selling our equity securities, selling the MASCT System and generating laboratory service revenue from our tests, and making short-term borrowings from stockholders or other related parties when needed. However, we cannot assure you that we will be successful in accomplishing any of these plans and, if we are unable to obtain adequate capital, we could be forced to cease operations.

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Our Diagnostic Tests

We currently offer two diagnostic tests and plan to offer two additional tests in late 2012 or early 2013. The tests that we currently offer and that are in development consist of the following:

ForeCYTE	The ForeCYTE Breast Health Test, launched in December 2011, provides personalized information about the 10-year and lifetime risk of breast cancer for women between ages 18 and 65. It involves collecting a specimen of nipple aspirate fluid, or NAF, using our patented, FDA-cleared *Mammary Aspirate Specimen Cytology Test*, or MASCT, System (our MASCT System received 510(k) clearance from the FDA in 2003). The NAF specimen is collected by a physician and returned to our CLIA-certified laboratory. We study the patient s NAF specimen and use a proprietary molecular and cellular biomarker test that detects basal or luminal cells to identify the presence of atypical ductal hyperplasia, or ADH, which is considered a precursor to breast cancer. We then input these cytopathological test results, together with the patient s personal medical and reproductive history and family history, into a clinically-validated risk assessment algorithm that calculates 10-year and lifetime risk of breast cancer and presents these results in one of three risk tiers developed by The National Comprehensive Cancer Network: Normal (<15% lifetime risk), Intermediate (15 20% lifetime risk), or High (>20% lifetime risk). The ForeCYTE Test results contain recommendations for care paths in each risk group and personalized information so that patients and healthcare providers can make more informed treatment decisions. The algorithm was developed from a Swedish registry of 158,041 individuals, in whom 3,257 cancers occurred, and was validated by E. Amir, D.G. Evans, A. Shenton, and others in an independent study of 3,150 women, 64 of whom developed breast cancer. The algorithm incorporates family history, personal reproductive history, and the presence or absence of usual ductal hyperplasia, or UDH (which is benign), ADH (which is pre-malignant) or malignant changes. The present methods used by pathologists to analyze traditional biopsy specimens, i.e., microscopy and, when needed, immunohistochemistry, are the same methods used to analyze ForeCYTE specimens and would be expected to achieve similar results for patients with similar medical conditions.
ArgusCYTE	The ArgusCYTE Breast Health Test, launched in December 2011, provides information to help inform breast cancer treatment options and to help monitor potential recurrence. It involves collecting a blood specimen from a patient using our patented, FDA 510(k)-Exempt blood collection tube and submitting it to our CLIA-certified laboratory (our ArgusCYTE Breast Health Test blood collection tube was registered with the FDA in 2011). It can monitor breast cancer distant recurrence by obtaining a liquid biopsy or blood sample, and analyzing it for the presence of circulating tumor cells, which can then be analyzed to determine the expression of Estrogen Receptor/Progesterone Receptor, or ER/PR, and Human Epidermal Growth Factor Receptor, or Her2, in those cells, a predictor of the cancer s sensitivity to existing treatment options. The presence of circulating tumor cells in the blood sample may serve as an early indicator of the recurrence of

breast cancer and the data obtained from the ArgusCYTE sensitivity analysis may help physicians better select which treatment options to use with a particular patient. The ArgusCYTE test uses a proprietary blood collection tube to obtain a blood sample for shipment and analysis at our CLIA-certified laboratory. The supplier of the blood collection tube owns patents with respect to the tube, while we own patents concerning laboratory features utilized in the testing process. Because the ArgusCYTE test involves the collection of a blood sample to be analyzed for the presence of circulating tumor cells, there is no comparable method relating to the analysis of traditional biopsy specimens that could be used to achieve results similar to or better than those provided by our ArgusCYTE test.

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FullCYTE	The FullCYTE Breast Health Test, which we intend to launch in late 2012 or early 2013 and is currently in development, is designed to assess the individual breast ducts for pre-cancerous changes in women previously identified to be at high risk for breast cancer. It involves collecting ductal lavage samples from each of the five to seven individual breast milk ducts using our patented and FDA-cleared Mammary Ductal Microcatheter System (our Microcatheter System received 510(k) clearances from the FDA in 1999 and 2000) and analyzing the samples by the same molecular and cellular biomarkers used in the ForeCYTE test described above. From these tests, we are able to ascertain which individual duct contains pre-malignant or malignant changes, which may allow the physician to better target treatment to the specific duct with the pre-malignant changes or malignant changes and therefore avoid side effects associated with systemic treatment. Traditional biopsies, involving invasive procedures in which tissue is removed surgically, typically cut across the natural anatomy of the breast ductal system, making subsequent intraductal treatment difficult or, in certain cases, impossible. The present methods used by pathologists to analyze traditional biopsy specimens, i.e., microscopy and, when needed, immunohistochemistry, are the same methods used to analyze FullCYTE specimens and would be expected to achieve similar results for patients with similar medical conditions.
NextCYTE	The NextCYTE Breast Cancer Test, which is in the prevalidation phase and which we intend to launch in late 2012 or early 2013, is designed to profile breast cancer specimens for prediction of treatment outcomes and distant recurrence in women newly diagnosed with breast cancer. It involves using surgery specimens and advanced genome sequencing techniques to quantify and analyze the entire tumor genetic transcriptome, which represents all genes that are being actively expressed within the tumor. Because our NextCYTE test analyzes traditional biopsy specimens using advanced genome sequencing techniques, we believe that other present methods of analyzing traditional biopsy specimens would not achieve results similar to or better than results provided by our NextCYTE test and we expect that physicians will be able to use the information provided by the NextCYTE test to better customize treatment options for women, based on the genetic composition of the individual tumor. We are currently conducting non-clinical trial research to verify the superiority of the technology regarding NextCYTE by profiling gene expression from breast cancer biopsy specimens obtained from commercial archival tissue banks, in which the five-year survival or death for the patients from whom the specimens are taken is known, and seeing if the algorithm can accurately predict the known outcome. The experiments are being conducted in a blinded fashion, without knowledge of the survival data, and we will not have knowledge of the outcome until the blind is broken (currently planned for September 2012). We own a pending PCT patent application on the NextCYTE technology to the use of full transcriptome analysis of 22,000 human genes in predicting breast cancer recurrence and have an option through February 2013 to license additional technology (specifically certain algorithms involving over 900 of these genes) to augment our existing technology from the University of Oslo in Norway. We do not believe this additional technology is essential to the operation or future development of the NextCYTE test, should we decide not to exercise this option.

We may not, however, achieve commercial market acceptance of any of our products and services. We must first demonstrate to physicians and other healthcare professionals the benefits of our tests and the MASCT System for their practice and these physicians and healthcare professionals may be reluctant to introduce new services into their practice due to uncertainty regarding reliability of the results of a new product or the learning curve associated with adoption of new services and techniques. Moreover, if third-party payors continue to refuse to cover the cost of collection of the NAF sample, whether from our

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MASCT System or competitors NAF collection devices, physicians may be less likely to recommend or use our products and services if the cost of performing a particular test will not be reimbursed. Even if we are successful in convincing physicians and other healthcare professionals to utilize our tests and services, we must obtain adequate capital to fund our operations until we become profitable and we may not be able to do so. Additionally, we have no prior experience with commercializing any products or services and will need to create an infrastructure to scale operations for commercialization, including hiring experienced personnel (including anatomic pathologists, cytologists, histotechnologists, skilled laboratory and information technology staff, and sales representatives) and building a network of regional, specialty distributors, each with a staff of independent sales representatives who have experience in women s health products to target physicians and mammography clinics in the United States.

Intraductal Treatment Research

Our Intraductal Treatment Research Program comprises our patented microcatheter-delivery technology and our patented pharmaceutical formulations for the intraductal treatment of breast pre-cancerous changes, ductal carcinoma in situ, or DCIS, and breast cancers. The method uses our Mammary Ductal Microcatheter System, invented by Dr. Susan Love, President of the Dr. Susan Love Research Foundation, and her colleagues, to administer proprietary pharmaceutical formulations into milk ducts that display pre-cancerous changes, with high local concentrations of the drugs in order to promote greater efficacy and limited systemic exposure, potentially lowering the overall toxicity of the treatment.

An October 2011 peer-reviewed paper published in *Science Translational Medicine* documented a study conducted at the Johns Hopkins Medical School demonstrating the prevention of breast cancer in rats with intraductal non-systemic chemotherapy, and a proof-of-principle Phase 1 clinical trial involving 17 women with breast cancer who subsequently received surgery. An accompanying editorial commented that intraductal treatment could be especially useful for women with premalignant lesions or those at high risk of developing breast cancer, thus drastically improving upon their other, less attractive options of breast-removal surgery or surveillance (termed watch and wait). We intend to build on these academic studies with a research program targeted initially at neoadjuvant therapy in DCIS and to begin preclinical studies during 2012. We have not yet begun the process of applying for FDA approval of our Intraductal Treatment Research Program.

Intellectual Property and FDA Marketing Clearances

As of the date of this prospectus, we own more than 120 issued patents (31 in the United States and at least 90 in foreign countries), and 6 pending patent applications (4 in the United States, 1 pending foreign application and 1 pending International Patent Cooperation Treaty (PCT) application) directed to our products, services, and technologies.

Our Founder

Our founder and chief executive officer, Steven C. Quay, M.D., Ph.D., FCAP, invented the MASCT System. Dr. Quay is a board-certified anatomic pathologist who completed both an internship and residency in anatomic pathology at the Massachusetts General Hospital, a Harvard Medical School teaching hospital, and is a former faculty member of the pathology department of Stanford University School of Medicine. He holds 76 U.S. patents and has invented and developed five FDA-approved pharmaceuticals.

Our Commercialization Strategy

The ForeCYTE Test provides us with two revenue sources:

(i) revenue from the sale of the MASCT System device and patient kits to physicians, breast health clinics, and mammography clinics; and

(ii) service revenue from the preparation and interpretation of the NAF samples sent to our laboratory for analysis.

The ArgusCYTE test provides only laboratory service revenue.

We offer each component of the MASCT System for sale separately. We currently price our NAF sample collection device at approximately $250 per device and our patient kits at approximately $30 per kit, and the

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cytology and molecular diagnostics testing and analysis services are billed to federal and/or state health plans at the 2012 Medicare reimbursement rates of either $384 or $1,275 per patient, depending on the complexity of the analysis performed. We expect that the substantial majority of patients will be billed at the $384 rate and that we would perform the more complex tests, corresponding with a reimbursement rate of $1,275, for only those patients who have an initial test result that requires further analysis. We have billed the testing and analysis regarding the 276 ForeCYTE samples processed through March 31, 2012 (which is equivalent to 138 patients) at the 2012 Medicare reimbursement rate of $384 per patient. We bill third-party payors at higher rates, as is customary for our industry. Currently, Medicare and certain insurance carriers do not reimburse for the NAF collection procedure by our MASCT System or for other NAF collection device systems similar to our MASCT System, although Medicare and certain insurance carriers do reimburse for the laboratory analysis of the NAF sample. Although we have received reimbursement from insurance carriers and Medicare for both our ForeCYTE and ArgusCYTE tests, any lack of Medicare or insurance coverage for the NAF collection procedure will require patients to bear the full costs of the NAF sample acquisition process used with the MASCT System, which may result in physicians and other healthcare professionals not adopting the MASCT System or recommending its use in patients. If this were to occur, we may be forced to reduce the price of the MASCT System, provide discounted pricing arrangements to secure sales, or we may not be able to sell the product and services components of the MASCT System at acceptable margins, all of which could limit our ability to generate revenue.

While we are conducting our field experience trial we are not charging for our ArgusCYTE collection kits and we currently price the ArgusCYTE test at approximately $1,500. Because we do not currently have a sufficiently reliable prior history of reimbursement with respect to the ArgusCYTE test, we currently do not recognize revenue until we have received reimbursement. As of March 31, 2012, we have not received reimbursement for any ArgusCYTE tests.

In December 2011, we began limited marketing of the ForeCYTE Test to physicians, primarily obstetric-gynecologists, as well as breast health and mammography clinics, for use in conjunction with other health screening examinations, including annual physical examinations and regularly scheduled cervical Pap smears and mammograms. We are establishing relationships with breast cancer centers to provide the ArgusCYTE Test to their patients. We plan to use regional specialty product distributors, with independent sale representatives specializing in women s health, to commercialize the ForeCYTE and ArgusCYTE Tests; however, we currently do not have distributor relationships and we cannot be certain that we will be able to build these relationships to adequately address the regional or national market. As of March 1, 2012 we had one person involved in sales.

Risk Factors

Our business is subject to numerous risks as discussed more fully in the section entitled Risk Factors beginning on page 10. Principal risks of our business include, but are not limited to, the following:

we will need significant additional capital to execute our business strategy as currently contemplated and have not identified significant alternative sources of funding, should this offering be unsuccessful;
we have a history of operating losses and expect to incur losses for the foreseeable future and may never achieve profitability;
The MASCT System and other risk assessment tools, diagnostic tests and other predictive and personalized medicine products that we may develop may never achieve significant commercial market acceptance;
we are dependent on the commercial success of the MASCT System and the ForeCYTE and ArgusCYTE Tests;
we may not be successful in commercializing the MASCT System because physicians and clinicians may be slow to adopt our product and, even if commercialized, the fees we receive for our products and services may be significantly lower than currently expected;

our ability to commercialize the MASCT System may be limited because Medicare and certain insurance carriers are not expected to provide reimbursement for the NAF sample collections which

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are necessary for our tests (even though Medicare and certain insurance carriers do provide reimbursement for the laboratory analysis of the collected NAF samples through our ForeCYTE and ArgusCYTE tests);
we may not be able to hire, train or maintain the independent sales representatives and build the distributorship arrangements necessary to market and sell the MASCT System and our services as planned; and
because the offering is on a best efforts, no-minimum basis, we may raise substantially less than the total offering amount contemplated by this prospectus, and, even if the offering is fully subscribed, we will need additional capital in the future.

Implications of being an Emerging Growth Company

As a company with less than $1 billion in revenue during our last fiscal year, we qualify as an emerging growth company as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

Only two years of audited financial statements in addition to any required unaudited interim financial statements with correspondingly reduced Management's Discussion and Analysis of Financial Condition and Results of Operations disclosure.

Reduced disclosure about our executive compensation arrangements.

Not having to obtain non-binding advisory votes on executive compensation or golden parachute arrangements.

Exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions for up to five years or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company if we have more than $1 billion in annual revenue, we have more than $700 million in market value of our stock held by non-affiliates, or we issue more than $1 billion of non-convertible debt over a three-year period. We may choose to take advantage of some but not all of these reduced burdens. We have taken advantage of these reduced reporting burdens in this prospectus, and the information that we provide may be different than what you might get from other public companies in which you hold stock.

Company Information

We were incorporated in Delaware in April 2009. Our principal executive offices are located at 4105 East Madison Street, Suite 320, Seattle, Washington 98112, and our telephone number is (206) 325-6086. Our corporate website is located at *www.atossagenetics.com* and our laboratory website is located at *www.nrlbh.com*. Information contained on, or that can be accessed through, our websites is not a part of this prospectus.

MASCT is our registered trademark and Oxy-MASCT and our name and logo are our trademarks. ForeCYTE, FullCYTE, NextCYTE, and ArgusCYTE are our service marks. This prospectus also includes additional trademarks, trade names and service marks of third parties, which are the property of their respective owners.

Our company name comes from Queen Atossa, daughter of Cyrus the Great and wife of Darius I, the King of the Achaemenid Empire. In about 470 BC, she became the first woman in recorded history to be diagnosed with breast cancer, of which she died.

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THE OFFERING

Securities offered by us:

Up to 1,000,000 shares of common stock.

Capitalization after the offering:

Up to 12,256,867 shares of common stock outstanding after the offering.

Use of proceeds:

We intend to use the net proceeds from this offering to expand our cytology and molecular diagnostics laboratory, fund the manufacture of MASCT System units, hire and train sales and marketing personnel, continue the research and development of the FullCYTE and NextCYTE Tests, support the internal research and development of the Intraductal Treatment Research Program, and for general corporate purposes. See Use of Proceeds.

Proposed NASDAQ trading symbol:

ATOS

The number of shares of our common stock outstanding is based on 11,256,867 shares of common stock outstanding as of the date of this prospectus, and excludes 627,757 shares issuable upon the exercise of options outstanding as of the date of this prospectus under our 2010 Stock Option and Incentive Plan, or 2010 Plan, as well as 822,517 shares of common stock reserved for future issuance under our 2010 Plan, in addition to 6,833,840 shares of common stock underlying outstanding warrants with a weighted-average exercise price of $1.56 per share.

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SUMMARY FINANCIAL DATA

The following summary financial data should be read together with our financial statements and the related notes and Management s Discussion and Analysis of Financial Condition and Results of Operations appearing elsewhere in this prospectus. The summary financial data in this section is not intended to replace our financial statements and the related notes. Our historical results are not necessarily indicative of the results to be expected for any future period.

We were incorporated on April 30, 2009. The following statement of operations data, including share data, for the fiscal years ended December 31, 2010 and 2011 have been derived from our audited financial statements and related notes included elsewhere in this prospectus. The balance sheet data as of December 31, 2011 and December 31, 2010 has been derived from our audited financial statements included elsewhere in this prospectus. The statement of operations data, including share data, for the three months ended March 31, 2011 and 2012, and the balance sheet data as of March 31, 2012, have been derived from our unaudited financial statements included elsewhere in this prospectus. The unaudited interim financial statements have been prepared on the same basis as the audited financial statements and reflect all adjustments necessary to fairly state our financial position as of March 31, 2012 and results of operations for the three months ended March 31, 2011 and 2012. The operating results for any period are not necessarily indicative of financial results that may be expected for any future period.

	For The Years Ended December 31,		For The Three Months Ended March 31,		From April 30, 2009 (Inception) Through March 31, 2012 (Unaudited)
	2011	2010	2012 (Unaudited)	2011 (Unaudited)	
Statement of Operations Data:					