FORWARD-LOOKING STATEMENTS

Some of the information presented herein may contain projections or other forward-looking statements regarding future events or the future financial performance of the Company which the Company undertakes no obligation to update. These statements, which Atossa undertakes no obligation to update, are subject to risks and uncertainties that may cause actual results to differ materially from the anticipated or estimated future results, including the risks and uncertainties associated with any variation between interim and final clinical results, whether *in vitro* test results will also be achieved in clinical studies, actions and inactions by the FDA, the outcome or timing of regulatory approvals needed by Atossa including those needed to commence studies of Endoxifen AT-301 and AT-H201, lower than anticipated rate of patient enrollment, estimated market size of drugs under development, the safety and efficacy of Atossa’s products, performance of clinical research organizations and investigators, obstacles resulting from proprietary rights held by others such as patent rights, impact of the COVID-19 pandemic and other risks detailed from time to time in Atossa’s filings with the Securities and Exchange Commission, including without limitation its periodic reports on Form 10-K and 10-Q, each as amended and supplemented from time to time.
ABOUT ATOSSA THERAPEUTICS

Clinical-stage biopharmaceutical company seeking to discover and develop innovative medicines in areas of significant unmet medical need with a current focus on breast cancer and COVID-19.

CLINICAL SUMMARY

Breast Health: Positive Phase 2 results April 2020; two Phase 2 studies underway in breast cancer; another Phase 2 for breast density planned for 2H 2020

COVID-19: Two drug candidates: AT-301 nasal spray; and AT-H201 being developed for patients on ventilators (positive in vitro test results for AT-H201)
EXPERIENCED LEADERSHIP

Steven Quay, MD, PhD, Chairman, CEO and President - Dr. Quay is certified in Anatomic Pathology with the American Board of Pathology, complete both an internship and residency in anatomic pathology at Massachusetts General Hospital, a Harvard Medical School teaching hospital, and is a former faculty member of the Department of Pathology, Stanford University School of Medicine. Dr. Quay is a named inventor on 87 U.S. patents, 130 pending U.S. patent applications, and is named inventor on patents covering five pharmaceutical products that have been approved by the U.S. Food and Drug Administration. Dr. Quay received an M.D. in 1977 and a Ph.D. in 1975 from the University of Michigan. He received his B.A. degree in biology, chemistry and mathematics from Western Michigan University in 1971.

Kyle Guse, CPA, ESQ, MBA, CFO and General Counsel, has served as Chief Financial Officer, General Counsel and Secretary since January 2013. His experience includes more than 20 years of counselling life sciences and other rapid growth companies through all aspects of finance, corporate governance, securities laws and commercialization. Mr. Guse has practiced law at several of the largest international law firms, including from January 2012 through January 2013 as a partner at Baker Botts LLP and, prior to that, from October 2007 to January 2012, as a partner at McDermott Will & Emery LLP. Before working at McDermott Will & Emery, Mr. Guse previously served as a partner at Heller Ehrman LLP. Mr. Guse began his career as an accountant at Deloitte & Touche and he is a licensed Certified Public Accountant in the state of California. Mr. Guse earned a B.S. in Business Administration and an M.B.A. from California State University, Sacramento, and a J.D. from Santa Clara University School of Law.

Janet R. Rea, MSPH, RAC, SVP Regulatory, Quality and Clinical Affairs, has nearly 35 years of industry leadership experience in regulatory affairs and quality. A Washington native, she obtained her B.S. degree in Microbiology from the University of Washington and was conferred a Master’s of Science of Public Health from the same institution. Her career in the healthcare industry started with Miami, FL-based Dade Division of then American Hospital Supply Corporation (now Baxter), followed by Genetic Systems, and she was an early employee of Seattle-based Immunex Corporation where she played a key role in the company’s first licensed product, LEUKINE®. She held positions with increasing levels of responsibility with MDS Pharma, Targeted Genetics, and executive positions with AVI BioPharma (now Sarepta), Poniard Pharmaceuticals and Protein Sciences Corporation (Meriden, CT), and Therapeutic Proteins International (Chicago, IL). She has also operated a consulting practice of both small and large organizations, and she has lectured at both Shoreline Community College and the University of Washington - Biomedical Regulatory Affairs Certificate and Master Program, where she was also appointed as an Assistant Clinical Professor.
<table>
<thead>
<tr>
<th><strong>CORPORATE SUMMARY</strong></th>
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<tr>
<td><strong>Company</strong></td>
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<td><strong>Our Mission</strong></td>
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<tr>
<td><strong>Debt</strong></td>
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<tr>
<td><strong>Cash</strong></td>
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<tr>
<td><strong>Capital May 8, 2020</strong></td>
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<td><strong>Corporate HQ</strong></td>
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## DRUG DEVELOPMENT PIPELINE

<table>
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<th>Program</th>
<th>Product</th>
<th>Preclinical</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>NDA/MAA (Target)</th>
<th>Commercial</th>
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<tr>
<td>COVID-19 Nasal Spray</td>
<td>AT-301</td>
<td></td>
<td>Symptom reducing nasal spray</td>
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<tr>
<td>COVID-19 HOPE</td>
<td>AT-H201</td>
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<td></td>
<td>Improve lung function on Ventilators</td>
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<tr>
<td>Intradermal/Microcatheters</td>
<td>Fulvestrant</td>
<td></td>
<td>Fulvestrant Study DCIS/Breast Cancer</td>
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<tr>
<td>CAR-T</td>
<td>Model development/study execution</td>
<td></td>
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<tr>
<td>Topical</td>
<td>Females (AUS)</td>
<td>Mammographic Breast Density (Sweden)</td>
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<tr>
<td>Oral</td>
<td>Females (AUS)</td>
<td>Window of Opportunity (Pre-surgery) (AUS)</td>
<td>Refractory-Endoxifen supplementation (TBD)</td>
<td>Mammographic Breast Density (Sweden)</td>
<td></td>
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<tr>
<td></td>
<td>Males (AUS)</td>
<td>Gynecomastia (TBD)</td>
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*In-progress*  |  *Completed*  |  *Planning Stage*
# LARGE MARKET OPPORTUNITIES

<table>
<thead>
<tr>
<th>Program</th>
<th>Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT-H201 for COVID-19 Ventilated Patients</td>
<td>393K deaths from COVID-19 as of June 4(1), many on ventilators</td>
</tr>
<tr>
<td>AT-301 Nasal Spray</td>
<td>6.7M COVID-19 cases world-wide(1)</td>
</tr>
<tr>
<td>Oral Endoxifen - for MBD</td>
<td>10M High MBD (BI-RAD C/D)(2)</td>
</tr>
<tr>
<td>Oral Endoxifen - Window Opportunity</td>
<td>200k ER+ Breast Cancers/Yr.</td>
</tr>
<tr>
<td>Intraductal - Fulvestrant</td>
<td>$800M U.S. sales for pre-surgery and surgery replacement therapy(3)</td>
</tr>
<tr>
<td>Intraductal - Immuno-oncology</td>
<td>35K Triple Negative Breast Cancers/Yr.(4)</td>
</tr>
</tbody>
</table>

(2) Nat’l Cancer Inst.: Prevalence of Mammographically Dense Breasts in the United States (Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200066/)
(3) Data from Defined Health: SERM Report January 2017
(4) Data from Breastcancer.org (Retrieved from: http://www.breastcancer.org/diagnosis/tripneg/behavior)
Approximately one-in-eight women and one-in-1,000 men will be diagnosed with breast cancer during their lifetime.

Every two minutes an American woman is diagnosed with breast cancer; 40,000 die each year.

The American Cancer Society (ACS) estimates that approximately 268,000 women will be diagnosed with breast cancer in the United States this year.

It is the second leading cause of cancer death in American women.

Financial Cost of $3.8 Billion per year.
ATOSSA’S COVID-19 HOPE PROGRAM

- COVID-19 HOPE Program utilizing proprietary AT-H201 launched in April 2020
  - Being developed to treat COVID-19 patients on ventilators to improve lung function
  - Has potential antiviral activity based on in vitro tests
- AT-H201 consists of two drugs approved by the FDA for other diseases; designed to operate as “chemical vaccine”
- Contracted with NY Hospital for clinical study
- Applied to FDA and IRB to open study
- Provisional patent applications filed
AT-H201 components inhibited SARS-CoV-2 from infecting VERO cells in a laboratory culture.

This appears to be the most potent inhibitor of SARS-CoV-2, defined as the ratio of the expected pulmonary dose to the in vitro effective dose, identified to date from published literature.

The components of AT-H201 were found to be at least four-times more potent than remdesivir.
AT-301 COVID-19 NASAL SPRAY

- AT-301 under development for at-home use for patients not sufficiently ill to require hospitalization
- Nasal spray delivery - targets infections in nasal passage
- Clinical study planned for 3Q-4Q 2020
- Provisional patent applications filed with US PTO
- Summit Biosciences developing device
THE UNMET NEED

Two COVID-19 Programs

World-wide pandemic with no vaccine

Endoxifen

Endoxifen for MBD - No FDA-approved treatment

Endoxifen for Window of Opp’y
200K ER+ BC/yr in U.S.

Endoxifen for Gynecomastia - No FDA-approved treatment

Intraductal Microcatheters

Provides alternative to systemic delivery, which can have:
- Systemic adverse effects
- Limited tumor drug level

ATOS intraductal microcatheter technology may:
- Increase drug to tumor ratio
- Improve efficacy
- Reduce toxicity
- CAR-T cells may follow lymphatic migration of cancer
• Endoxifen is most active metabolite of tamoxifen, which is commercially successful and widely studied

• Problems with tamoxifen: side effects; must be metabolized by liver; up to 50% patients may not benefit

• Endoxifen has fewer nausea receptors than other metabolites so may have fewer side effects
TAMOXIFEN
Ki-67 reduced by more than 50% in every patient (n=6) in the window of opportunity between initial biopsy and surgery; overall reduction of 74%, p = 0.031.

All six patients had a Ki-67 below 25% after treatment. In a paper entitled, “Prognostic value of different cut-off levels of Ki-67 in breast cancer: a systematic review and meta-analysis of 64,196 patients,” Ki-67 was an independent prognostic value for predicting overall survival in ER+ breast cancer patients. Ki-67 levels below 25% were associated with the lowest risk of death in this systematic review and meta-analysis.

Treatment ranged from 16-40 days with an average of 22 days.

There were no safety or tolerability issues, including vasomotor symptoms such as hot flashes and night sweats, which are often a tolerability challenge for patients on tamoxifen.
Window of Opportunity (WOO) - time period between diagnosis and surgery.

Interim Results: Positive results announced May 2020

Being performed in Australia by Avance Clinical.

Pilot Phase: Daily oral Endoxifen for 21 days in up to 8 ER+ stage 1 or 2 patients scheduled for lumpectomy or mastectomy

Expansion Phase: 17 additional patients; revised to combine phases.

Primary Endpoint: reduced tumor activity measured by Ki67.

Secondary Endpoints: safety, tolerability and assessment of Endoxifen on expression levels of both estrogen and progesterone receptor
Phase 2 study to reduce MBD successfully achieved endpoints: topical Endoxifen significantly reduced MBD (p = 0.02)

90 subjects post-menopausal, placebo controlled, double blinded, randomized

Adverse skin reactions

Up to 6 months of daily topical dosing

Mammograms at 0, and 6 months or study exit

These results support development of oral Endoxifen
• Three placebo-controlled, double-blinded Phase 1 studies completed: oral and topical in women and topical in men.

• Safety/tolerability: no clinically significant safety signals or adverse events. Well tolerated at each dose level.

• Pharmacokinetics: oral capsule yielded blood levels at or above the published target therapeutic effect in the adjuvant setting.

• Solution to Tamoxifen Delay? oral Endoxifen capsule reached steady state by 7 days vs. approx. 50-200(1) for Tamoxifen. BC tumors can double in size in 29 days.(2)

(1) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3357105/
(2) https://breast-cancer-research.biomedcentral.com/articles/10.1186/bcr2092
SINGLE DOSE ORAL PHARMACOKINETICS

Time to maximum Endoxifen level is less than 8 hours

Potential Therapeutic Level
ENDOXIFEN - FOR REDUCTION OF MBD

MBD CAN MASK TUMORS

Source: http://woodtv.com/2015/05/11/are-you-dense-know-your-numbers/
A NEWLY RECOGNIZED BREAST CANCER RISK FACTOR: MAMMOGRAPHIC DENSITY

NEW FEDERAL LAW AND STATE LAWS REQUIRE THAT WOMEN BE INFORMED OF THEIR DENSITY
Underserved markets in Gynecomastia

Gynecomastia (breast enlargement and pain):

- Affects 25% of men ages 50-69(1), approx. 10m men
- Causes: androgen deprivation therapy to treat prostate cancer; anti-anxiety medications; cancer treatments (chemotherapy), and some heart medications
- Breast bud irradiation, compression garments and plastic surgery
- Quality of life issues/psychological issues
- No FDA-approved therapeutic

Phase 1 study competed

(1) Mayo Clinic (retrieved from: https://www.mayoclinic.org/diseases-conditions/gynecomastia/symptoms-causes/syc-20351793)
Program could qualify for designation under the 505(b)(2) status.

**Advantages:**

- A single clinical study of safety and efficacy
- Limited additional clinical or pre-clinical studies
- Multi-year market exclusivity possible
✓ Potential advantages - higher local drug/immuno-therapy exposure; lower systemic concentrations (lower toxicity) vs. systemically delivered agents; potential for lymphatic migration of T-cells

✓ Recent Activity - Kite Pharma acquisition by Gilead; Juno acquired by Celgene; FDA approved Novartis's Kymriah™ for B-cell Acute Lymphoblastic Leukemia

✓ Phase 2 study - fulvestrant for DCIS or breast cancer

✓ Fulvestrant - FDA approved (AstraZeneca); opportunities with other drugs and immunotherapies
THIRTY WOMEN WITH ER+ DCIS OR INVASIVE BREAST CANCER

PATHOLOGICAL RESPONSE: BIOMARKER EXPRESSION

FACT-ES: SIDE EFFECTS

TISSUE AND BLOOD LEVELS OF FULVESTRANT
COVID-19 - AT-H201:
• Q2/Q3 2020 IRB and FDA approval to open study
• Q3 2020 Commence initial HOPE study

COVID-19 - AT-301:
• Q3-Q4 2020 Open clinical study

Breast Health - Oral Endoxifen:
• 2H 2020 receive regulatory approval to open Phase 2 study to reduce MBD.
• 2H 2020 begin enrollment in Phase 2 study to reduce MBD
RICHARD I. STEINHART

Mr. Steinhart is currently the Vice President and Chief Financial Officer of BioXcel Therapeutics, Inc.

GREGORY L. WEAVER

Mr. Weaver formerly served as Chief Financial Officer of Eloxx Pharmaceuticals, Inc.

H. LAWRENCE REMMEL, ESQ.

Mr. Remmel is currently a partner of the law firm Pryor Cashman LLP, located in New York City, where he chairs the Banking and Finance practice group.
BOARO OF DIRECTORS

STEPHEN J. GALLI, M.D.

Before joining Stanford, Mr. Galli was on the faculty of Harvard Medical School. He holds 14 U.S. patents and has over 400 publications.

SHU-CHIH CHEN, PH.D.

Dr. Chen has served as founder and director since April 2009.

STEVEN C. QUAY, M.D., PH.D.

Dr. Quay has served as Chief Executive Officer, President and Chairman of the Board of Directors of the Company since the Company was incorporated in April 2009.
PER HALL, MD, PH.D.

Dr. Hall is the Head of the Department of Medical Epidemiology and Biostatistics at Karolinska Institute. Dr. Hall is leading the unique KARMA (Karolinska Mammography Project for Risk Prediction of Breast Cancer) Cohort

MAKARAND (MAK) JAWADEKAR, PH.D.

Dr. Mak Jawadekar is currently an independent Pharma Professional. He worked at Pfizer, Inc. based in Groton-New London Connecticut for 28 consecutive years.

CARL NOVINA, MD, PHD

Dr. Novina is currently the Principal Investigator of the Novina Lab at the Dana-Farber Cancer Institute.
FOR MORE INFORMATION

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