Clinical Development Update
September 2018

OTCQB: BCTXF
TSX: BCT.V
Forward-Looking Statements

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Clinical Development Update - Summary

- Completed enrollment of MBC patients in the Phase I/IIa “monotherapy” study of Bria-IMT™

We have confirmed our mechanism of action and achieved proof of concept

- Initial safety data appears superior to that of the other advanced or approved drugs for breast cancer when they were at a similar clinical stage of development
- Initial efficacy data is similar or superior to those of other advanced or approved drugs for breast cancer when they were at a similar clinical stage of development

- Transitioning into Combination Study of Bria-IMT™ with Keytruda or Yervoy in patients with MBC expecting better response rates than those in the “monotherapy” study
  - Initial safety data is expected in 4Q2018
  - Initial efficacy data is expected in 1Q2019

- Bria-OTS™, the first off-the-shelf personalized treatment for metastatic breast cancer, is expected to enter the clinic in 2019
Clinical Development Summary – To Date

**Outstanding Safety Data. Our recent data confirms “HLA matching Hypothesis”, and supports our strategy for the development of Bria-OTS™**

**Data (4 patients)-Preliminary Ph I/IIa Study (2004-2005)**
- Bria-IMT™ resulted in a near complete tumor regression in a patient (top-respondent) with MBC
  - The top-respondent patient matched Bria-IMT™ at key HLA types (see Slide 19)

**Interim Data (20 patients)-Ongoing Phase I/IIa Study (2017-2018)**
- **Outstanding safety data.** Comparable or superior to data to approved drugs for breast cancer at a similar stage of development
- **Tumor shrinkage or decreased circulating tumor cells.** Was observed in 33% of patients who matched Bria-IMT™ at one HLA type and 75% of patients who matched Bria-IMT™ at 2 HLA types further confirming “HLA matching hypothesis”

**Clinical Development Strategy**
- Initiating combination study of Bria-IMT™ with Keytruda or Yervoy
- BriaCell’s off-the-shelf personalized immunotherapy, Bria-OTS™, is expected to enter the clinic in 2019
To date, Bria-IMT™ has been dosed in 24 patients (4 in 2004-2005, 20 in 2017-2018)

Interim Data (20 patients)-Ongoing Phase I/IIa Study (2017-2018)

- Bria-IMT™ has been very well tolerated (≥60 doses given to date)
- The majority of adverse events (AEs) were limited to expected minor local irritation at the injection sites
- No related grade >3 or unexpected AEs
- No related serious AEs
- No serious, unexpected, related AEs
- Most patients who have dropped out did so due to worsening of their underlying disease
Bria-IMT™ Efficacy as Predicted based on Mechanism of Action

- Bria-IMT™ appears to be most effective in patients who match with Bria-IMT™ at 2 HLA loci (types) further supporting our “HLA Matching Hypothesis”, and the development of Bria-OTS™ to cover 90% of the patient population
- Combination with immune checkpoint inhibitors may induce a more potent anti-cancer response, leading to our strategy of combination studies of Bria-IMT™ with Keytruda or Yervoy

Interim Data - Ongoing Phase I/IIa Study (2017-2018)

- Definite tumor shrinkage in 3 patients in the current study (4 total)
- Another patient had evidence of reduced circulating cancer-related cells
- First tumor assessment of 5 patients – pending
- 3/15 did not match Bria-IMT™ at any HLA types - none have responded to the treatment
- Of those who matched at least at 1 HLA type, the response rate was 4/15 (27%) for tumor shrinkage & 5/15 (33%) for a biological response
- Of those who matched at 2 HLA types the tumor shrinkage rate was 2 of 4 (50%) and 3 of 4 (75%) for a biological response
- Expression of PD-L1 on circulating cancer cells and cancer-associated cells in 100% of patients evaluated to date supporting use with a PD-1 inhibitor such as Keytruda
Bria-IMT™ - Efficacy as Predicted

- Bria-IMT™ appears to be most effective in patients who match with Bria-IMT™ at 2 HLA loci (types) further supporting our “HLA Matching Hypothesis”, and the development of Bria-OTS™ to cover 90% of the patient population.
- Combination with immune checkpoint inhibitors may induce a more potent anti-cancer response, leading to our strategy of combination studies of Bria-IMT™ with Keytruda or Yervoy.

Interim Data (19 patients)-Ongoing Phase I/IIa Study (2017-2018) & Original Study (2004-2005)

<table>
<thead>
<tr>
<th>Patients (n)</th>
<th>HLA Match</th>
<th>Tumor Shrinkage</th>
<th>Lower Circulating Cancer Cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>≥2</td>
<td>50%</td>
<td>75%</td>
</tr>
<tr>
<td>11</td>
<td>≥1</td>
<td>27%</td>
<td>33%</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

- PD-L1 expression on circulating cancer cells & cancer-associated cells in 100% of patients (to date) → Strong rationale for combination with checkpoint inhibitors like Keytruda.
Phase I/II “Monotherapy” Study has enrolled 31 with data available on 20 subjects dosed to date.

This study will be closed and emphasis switched to the combination therapy study with Keytruda or Yervoy.

The combination therapy study has recently been altered so that patients can enter directly into that study.

The FDA approved protocol states that 6 patients can be treated, and the safety data should be evaluated before enrollment of additional patients.

We expect a rapid enrollment schedule, and initial safety data in 4Q2018.

Efficacy data on these initial patients is expected in 1Q 2019 with additional patient enrollment in the study.

The data of the combination study is of great interest by big pharma for potential partnership opportunities with a manufacturer of a PD-1 or a PD-L1 Inhibitor.
Combination Study of Bria-IMT™ with Keytruda or Yervoy

Baseline: Imaging, labs, clinical evaluation

Combo Rx weeks 1,4,7,10

Restage: Imaging, labs, clinical evaluation

(Combo) Rx weeks 13,16,19,22

If Progression

(Combo) Rx weeks 25,28,31,34

If Progression

(Combo) Rx weeks 37,40,43,46,49

If Progression

Restage: Imaging, labs, clinical evaluation

Restage: Imaging, labs, clinical evaluation

Restage: Imaging, labs, clinical evaluation

May remain on study if receiving clinical benefit

OFF STUDY

Currently Recruiting:

- Treatment in combination with Keytruda® for PD-L1(+) or PD-L2(+) tumors q3wks x up to 24 cycles, then Bria-IMT™ alone q3wks

-OR-

- Treatment in combination with Yervoy® for PD-L1/2(-) tumors q3wks x 4 cycles, then Bria-IMT™ alone q3wks

- Imaging every 6-12 weeks

Keytruda® is a registered trademark of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc.

Yervoy® is a registered trademark of Bristol-Myers Squibb Company
Bria-IMT™ - Potential Mechanisms of Action

**Bria-IMT™ directly stimulates cancer fighting CD4+ and CD8+ T cells (further boosts the response)**

**Bria-IMT™ produces breast cancer antigens which are taken up by dendritic cells and “presented” to CD4+ and CD8+ T cells implicated in tumor destruction.**

**Bria-IMT™ secretes GM-CSF which further promotes dendritic cell-based antigen presentation (boosts the response)**
So far, excellent safety profile of Bria-IMT™ and targeted anti-tumor immune response has been demonstrated.

Bria-IMT™ & Bria-OTS™ should synergize with the following:

- Existing approved immunotherapies, especially PD-1 and PD-L1 inhibitors
- Immunotherapies under development
- Targeted therapies (tyrosine kinase inhibitors, breast cancer targeting antibodies or ADCs, etc.)
Bria-OTS™ - Off-the-Shelf Personalized Immunotherapy

These allele combinations cover/match with ~90% of the advanced breast cancer population

1. BriaDX™ reveals the patient’s Class I and Class II HLA Alleles
2. The pre-manufactured Bria-OTS™ HLA Alleles are selected for the specific patient
3. The selected Bria-OTS™ cell lines are then shipped to the clinical site for patient treatment
Our main priority will be the development of Bria-OTS™, BriaCell’s off-the-shelf personalized immunotherapy – expected to double match 90% of the patient population and in the clinic by 2019

- Bria-OTS™ engineering requires 3 stages:
  - Knock-out endogenous HLA genes
    - Transfect in GM-CSF and IFNα genes
    - Transfect in HLA genes that match more patients
- We have successfully completed Stage 1
- Stage 2 and Stage 3 genes have been developed and are being introduced into SV-BR-1 cells
- Anticipate completion of engineering and beginning of GMP manufacturing in 1Q 2019
- On track to begin clinical study in 2019
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## Development Timeline – Breast Cancer

| Year | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 2018 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2019 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2020 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2021 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2022 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2023 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

### 2018
- **Category**: Phase I/II
- **Product**: Bria-IMT™
- **Status**: Monotherapy
- **Timeline**: Currently Enrolling Phase II Bria-IMT™ + Checkpoint Inhibitors (1Q18 → 2Q20)

### 2022
- **Category**: Bria-OTS™
- **Description**: Off-the-Shelf Personalized Immunotherapy
- **Status**: Monotherapy and Potential Partnered Combo Therapy (2H19 → Ongoing)

### 2023
- **Category**: Bria-OTS™
- **Description**: Off-the-Shelf Cell Line cGMP Manufacturing and BriaDX™
- **Status**: Registration Studies (1Q20 → 2H22)
- **Details**: Bria-IMT™ with Checkpoint Inhibitors, Bria-OTS™ +/- Checkpoint Inhibitors

### Additional Information
- Currently in discussions with potential partners:
  - **Phase II**: Bria-IMT™ plus Additional Combinations (1Q19 → 4Q22)
    - Examples: PD-1 Inhibitor, PD-L1 inhibitor, anti-CTLA4, anti-GITR, anti-OX40
Upcoming Milestones & Catalysts

✓ Q3 2018: Data on first 20 Patients

❑ Q3 2018: Initiate Combination Study of Bria-IMT™ with Keytruda or Yervoy
❑ Q4 2018: Switch to a novel frozen Bria-IMT™ formulation
❑ Q4 2018: Safety Data (6 patients) of the Combination Study (San Antonio Breast Cancer meeting)
❑ Q4 2018: Ongoing Corporate Partnership/Collaboration Discussions

❑ Q1 2019: Efficacy Data (6 patients) of the Combination Study
❑ Q2 2019: Additional Safety and Efficacy data for Monotherapy and Combination Study (AACR meeting)
❑ Q2 2019: Final data for Monotherapy and Additional Data for the Combination Study (ASCO meeting)
❑ H2 2019: Bria-OTS™ Authorization from FDA; First Patient Dosed
Bria-IMT™ Phase IIa Monotherapy Trial

Enrollment Completed:
- 30 MBC patients screened and 20 dosed
- **Primary objectives**: Safety & tumor response
- Exploratory objectives include immune response to tumor, biomarkers, Quality of Life
- Pre-dose low dose cyclophosphamide to reduce immune suppression
- Post-dose IFN-α2b to boost cell mediated immunity

Baseline: Imaging, labs, clinical evaluation

- **Bria-IMT™ 1,2,3** (week 1,3,5)
- **Bria-IMT™ 4,5** (month 2,3)

Restage: Imaging, labs, clinical evaluation*

- **Bria-IMT™ 6,7,8** (month 4,5,6)

Restage: Imaging, labs, clinical evaluation (before month 7 and cycle 9)

- **Bria-IMT™ 9,10,11** (month 7,8,9)

Restage: Imaging, labs, clinical evaluation (before month 10 and vaccine 12)

- **Bria-IMT™ 12,13,14** (month 10,11,12)

Non-progressive response

Restage: Imaging, labs, clinical evaluation

Non-progressive response

Combination Therapy

Progression
### Bria-IMT™ Non-Personalized Immunotherapy – Given as Monotherapy

- Patient A002 was the only patient matching a key HLA type with Bria-IMT™ and experienced tumor regression and complete remission at some metastatic sites.

<table>
<thead>
<tr>
<th>Tumor Type</th>
<th>Survival (months)</th>
<th>Tumor regression</th>
<th>HLA-A Alleles</th>
<th>HLA-B Alleles</th>
<th>HLA-DRB3 Alleles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>40.7</td>
<td>No</td>
<td>11:01 24:02</td>
<td></td>
<td>01:01 02:02</td>
</tr>
<tr>
<td>Patient A001</td>
<td>Breast</td>
<td>33.7</td>
<td>YES</td>
<td>02:01 11:01</td>
<td>18:03 44:02</td>
</tr>
<tr>
<td>Patient A002</td>
<td>Breast</td>
<td>35.6</td>
<td>No</td>
<td>02:01 03:01</td>
<td>07:02 13:02</td>
</tr>
<tr>
<td>Patient B001</td>
<td>Breast</td>
<td>7.0</td>
<td>No</td>
<td>11:01</td>
<td>03:01 40:01</td>
</tr>
</tbody>
</table>

**Bria-IMT™ - Preliminary Ph I/IIa Study (2004-2005)**
We compared the interim data of Ph I/IIa study of Bria-IMT™ in advanced breast cancer with the data in the early stage clinical studies of recently approved breast cancer drugs, and one fast tracked product candidate.

**Apples to apples comparison:** Early Stage Clinical Studies in oncology are typically done in patients with no other therapeutic options. Thus, the patients have very advanced disease and response rates are typically quite low.

The patients in our Ph I/IIa study have been heavily pre-treated (median 4.5 prior regimens)

Some recent studies of relevance in breast cancer are noted in the following slides
The market for breast cancer drugs is a multibillion dollar marker with new drugs being approved in an ongoing basis indicating the shortage of safe and effective treatments for this deadly disease.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Technology</th>
<th>Approved for</th>
<th>Market (US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibrance (palbociclib)</td>
<td>CDK 4/6 Inhibitor</td>
<td>HR+/HER2- MBC in combination with fluvestrant or aromatase inhibitor</td>
<td>$933M in 1Q2018; $3,126M in 2017</td>
</tr>
<tr>
<td>Kisqali (ribociclib)</td>
<td>CDK 4/6 Inhibitor</td>
<td>2017: HR+/HER2- MBC in combination with fluvestrant or aromatase inhibitor</td>
<td>Peak sales projected at $2.5B</td>
</tr>
<tr>
<td>Verzenio (abemaciclib)</td>
<td>CDK 4/6 Inhibitor</td>
<td>2017: HR+/HER2- MBC in combination with fluvestrant or aromatase inhibitor</td>
<td>Peak sales projected at $2B</td>
</tr>
<tr>
<td>Lynparza (olaparib)</td>
<td>Poly (ADP-ribose) polymerase (PARP) inhibitor</td>
<td>2017: ovarian &amp; breast cancer</td>
<td>$997M in 2017</td>
</tr>
<tr>
<td>Halaven (eribulin mesylate)</td>
<td>Tubulin-based antimitotic</td>
<td>2H2017: 3rd line MBC &amp; liposarcoma</td>
<td>$181M in 2017</td>
</tr>
<tr>
<td>balixafortide</td>
<td>CXCR4 antagonist</td>
<td>Fast track designation in 2018 for HER2- MBC who have failed 2 prior regimens</td>
<td></td>
</tr>
</tbody>
</table>
Bria-IMT™ shows superior safety and similar to superior efficacy data compared with those of the multi-billion dollar drugs when they were at a similar early stage of development.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Patient # (n)</th>
<th>Safety</th>
<th>Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibrance (palbociclib)</td>
<td>41 &amp; 18</td>
<td>20%-61%: Gr3/4 Neutropenia</td>
<td>0% response rate (n=41); 11% PR (n=18) but only with letrozole (0% for monotherapy)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>23%-39%: Gr3/4 Leucopenia</td>
<td></td>
</tr>
<tr>
<td>Kisqali (ribociclib)</td>
<td>132</td>
<td>27%: Gr3/4 Neutropenia 17%: Gr3/4 Leucopenia</td>
<td>2.3% PR – included 1 in breast cancer (5% of breast cancer patients)</td>
</tr>
<tr>
<td>Verzenio (abemaciclib)</td>
<td>12</td>
<td>17%: Gr3/4 Neutropenia 33%: Gr3/4 Leucopenia</td>
<td>17% PR – included 1 in breast cancer</td>
</tr>
<tr>
<td>Lynparza (olaparib)</td>
<td>28</td>
<td>11%: Gr3+ Neutropenia 8%: Gr3+ Thrombocytopenia</td>
<td>0% response rate for breast cancer (8 patients)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18%: Gr3 Fatigue 25%: Gr3 Hypertension</td>
<td></td>
</tr>
<tr>
<td>Halaven (eribulin mesylate)</td>
<td>12</td>
<td>100%: Gr3/4 Neutropenia 83%: Gr3/4 Leukopenia</td>
<td>8% PRs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25%: Gr3/4 Lymphopenia 8%: Gr3/4 Febrile neutropenia</td>
<td></td>
</tr>
<tr>
<td>balixafortide</td>
<td>56</td>
<td>41%: Gr3/4 Neutropenia 11%: Gr3/4 Leucopenia</td>
<td>30% PRs in combination with Halaven</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11%: Gr3/4 Febrile neutropenia 2: Related mortalities</td>
<td></td>
</tr>
<tr>
<td>Bria-IMT™</td>
<td>20</td>
<td>Injection site reactions No related SAEs or SUSARs</td>
<td>Tumor vol. ↓, &amp;/or ↓ circul. tumor cells) All Comers: 21%(4/19), 26%(5/19) One or More HLA matches: 27%(4/15), 33%(5/15) Two or More HLA matches: 50% (2/4), 75% (3/4)</td>
</tr>
</tbody>
</table>