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Bioasis Platform Technology Company Overview:
Platform Technology Evolution

Key Take Home Messages:
• Significantly undervalued, hidden on the TSX.V
• **Superior** to & outperforms Denali, et al., (NASDAQ: DNLI)
• Attracted exceptional talent to BoD, SAB and management
• xB³ Platform technology can take well-established, efficacious products, make them brain penetrant and turn them into NMEs
• We intend to advance the xB³ technology via internal wholly-owned programs and **selective BD partnering**

Near-Term Value Creating Milestones:
• Advancing brain cancer and neurodegeneration programs into development
  - xB³-001 Target Milestones: FDA pre-IND (Type B) Meeting October 2018, FIH 3Q/2019
• Deliver therapeutics via the LRP1 receptor
• We have secured strong IP and employ a forward-looking strategy (example: xB³-001 patent through 2035)
• Partnering with large pharma remains a value driver

Platform Technology Evolution

<table>
<thead>
<tr>
<th>2007/8</th>
<th>2013/14</th>
<th>2017/18</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>p97/Melanotransferrin</strong></td>
<td><strong>Transcend-Pep</strong></td>
<td><strong>xB³ Platform</strong></td>
</tr>
<tr>
<td>• Human protein 80 kDa (692 aa)</td>
<td>• 12 aa peptide derived from p97</td>
<td>• 12 aa peptide derived from p97 optimized</td>
</tr>
<tr>
<td>• Delivers small anti-cancer agents</td>
<td>• Delivers biologics and oligonucleotides</td>
<td>• External validation of the xB³ superiority to p97</td>
</tr>
<tr>
<td>• Significantly better in vitro BBB transcytosis vs. transferrin</td>
<td></td>
<td>• Has no impact on systemic PK of the payload</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Improved PK</td>
</tr>
</tbody>
</table>

**Near-Term Value Creating Milestones:**
- Advancing brain cancer and neurodegeneration programs into development
  - **xB³-001** Target Milestones: FDA pre-IND (Type B) Meeting October 2018, FIH 3Q/2019
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**Key Take Home Messages:**
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- Attracted exceptional talent to BoD, SAB and management
- xB³ Platform technology can take well-established, efficacious products, make them brain penetrant and turn them into NMEs
- We intend to advance the xB³ technology via internal wholly-owned programs and **selective BD partnering**
• **Roche’s ‘Brain Shuttle’** transferrin-based vehicle gets less than 1% of its antibody payloads across the BBB, similar to what Armagen (now in Phase II), Genentech and Denali achieve”

• “**Angiochem** reportedly can achieve 1.5% delivery with its peptide-conjugate technology....”

• “**Bioasis’ xB³** platform preclinically reaches the 4-5% level, and appears to be applicable to a broad spectrum of molecular types and sizes”

• “**Bioasis: Reconfigured with a new management and a BoD/SAB with some well-known neuroscientists aboard. Their xB³ drug delivery technology appears to have advantages in terms of payload flexibility and efficiency of delivery (see p.6); their most advanced programs are relevant to neuro-oncology, but neurodegeneration is their other area of primary interest**"
Our People:
Strong Management Team, Advisors & Board of Directors

Leadership Team

Mark Day, Ph.D.
President & CEO
Member, Board of Directors

Chris Lowe, M.B.A.
CFO

Caroline Hill, Ph.D.
SVP, R&D Operations

Mei Mei Tian, Ph.D.
VP, External Research

Catherine London
EVP, Corp. Comm’s & IR

Legal Counsel

Warren K. Volles, Esq.
iPraxus Legal
External IP Counsel

Michael Partridge
Goodmans LLP
External Canadian Counsel

Board of Directors

Deborah Rathjen, Ph.D. MAICD, FTSE
Chair
CEO, Bionomics

Nancy Stagliano, Ph.D.
Director
Previous CEO at True North, iPierian & CytomX

Maha Radhakrishnan, M.D.
Director
SVP, Head of Worldwide Medical, Bioverativ Therapeutics Inc.
Our People:
Strategic Consultants

Strategic Consultants

Bonnie Goldmann, M.D.
Regulatory Strategic Advisor
30+ years experience; formerly with J&J, Merck

Stanley Roberts, Ph.D.
Preclinical Safety & PK Strategic Advisor
35+ years of experience; formerly with Abbott, CovX/Pfizer

Patrick Yeramian, M.D., Ph.D.
Clinical Strategic Advisor
30+ years of experience; formerly with Searle, Vaccine & Gene Therapy Institute of Florida

Arin Bose, Ph.D.
CMC Strategic Advisor
30+ years of experience; formerly with Pfizer; former chair of biologics & leadership committee of PhRMA

Scientific Advisory Board

Prof. John H. Krystal, M.D.
Chair
Yale University School of Medicine
Yale-New Haven Hospital

Jeffery L. Cummings, M.D.
Member
Cleveland Clinic
Center for Neurodegeneration and Translational Neuroscience

John P. Wikswo, Jr., Ph.D.
Member
Vanderbilt University
Vanderbilt Institute for Integrative Biosystems Research and Education
The Blood-Brain Barrier Problem and the Bioasis Solution

A Complex Problem

Invasive Approaches

Non-Invasive Approaches

Brain Tissue

Blood Vessels

xB³

Therapeutic

RMT Receptor Mediated Transcytosis
Bioasis Therapeutic Targets
xB³-001: Brain Metastasis - FIH 2019

Target Engagement
Pharmacodynamic Biomarker
HER 2+ Human Brain Met Model
Bioasis/Texas Tech PoM
Published MS

Nounou et al. Pharm Res. December 2016, 33(12); 2930-2942
xB³ Delivers Trastuzumab to Tumor Brain Tissue

Time Point: 2hr Post-IV Injection

Brain tissue distal to tumors (BDT)
HER2+ breast cancer metastasis distributed throughout the brain

Drug uptake rate in brain (ml/s/g)

Brain Tumor

Nounou et al. Pharm Res. December 2016, 33(12); 2930-2942
xB³ Delivers Trastuzumab to Tumor Across the BBB

xB³ -TZM Reduces the Tumor Number by 68%

Target Engagement: Concentrations of xB³-TZM within Brain

Preferential uptake of radio-labeled xB³-TZM conjugate into tumors compared with BDT

xB³-TZM Reduces Tumors by 68%. No Impact of TZM Alone

One-way ANOVA **P<0.001, ***P<0.0001 Mean+/SEM

Nounou et al. Pharm Res. December 2016, 33(12); 2930-2942
Patent portfolio covers Bioasis’ platform technologies (their uses and indications)

- Comprises over 120 patents and pending applications (10+ patent families) covering xB³, p97, fusion proteins of p97 or xB³ with antibodies, including trastuzumab, bevacizumab, and other payloads
- Key xB³ patent granted in U.S. (expires in 2034; additional patent term extension up to 5 years)
- Patents have been filed in major geographic markets and have expiration dates in 2034-2035 (plus patent term extensions)

Patent pending for xB³-trastuzumab (and uses/indications)

- Patents have been filed in major geographic markets with expiration date in 2035 (plus patent term extensions)

Additional patents planned for xB³-related innovations
Bioasis Utilizes LRP1-Mediated Transport with Faster Delivery Efficiency: Superior to Transferrin Receptor-Based Transport

**Features**

<table>
<thead>
<tr>
<th>Bioasis xB³</th>
<th>Armagen</th>
<th>Genentech</th>
<th>Roche</th>
<th>Denali</th>
<th>Angiochem</th>
</tr>
</thead>
<tbody>
<tr>
<td>% injected dose in brain</td>
<td>4-6%</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
<td>~1.5%</td>
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</table>

**Mode of Action**

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<tbody>
<tr>
<td>LRP1</td>
<td>Tfr and IR</td>
<td>Tfr</td>
<td>Tfr</td>
<td>Tfr</td>
<td>LRP1</td>
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**Brain Distribution**

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<tr>
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**Antibodies**

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<td>✓</td>
<td>✓</td>
<td>✓</td>
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</table>

**Enzymes**

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**siRNA**

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<td>✓</td>
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**Small molecules**

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*Bioasis Utilizes LRP1-Mediated Transport with Faster Delivery Efficiency: Superior to Transferrin Receptor-Based Transport*

The company was evaluating blood-brain barrier platforms using test antibodies for brain delivery. They evaluated eight blood-brain companies and selected Bioasis. The selection was based on speed of delivery, superiority to transferrin and multi-modality potential.

Made two xB³ fusion proteins: xB³-Ab, xB³-Ab-ILXX. Dose dependent efficacy, demonstrating strong PK/PD relationship.

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## Bioasis and Denali: BBB Platforms Comparison

<table>
<thead>
<tr>
<th>Bioasis</th>
<th>Denali</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LRP1 receptor mediated</strong>: demonstrated superior transcytosis</td>
<td><strong>Transferrin receptor-mediated</strong> transcytosis: demonstrated</td>
</tr>
<tr>
<td>efficiency across the BBB</td>
<td>inferior transcytosis efficiency across the BBB</td>
</tr>
<tr>
<td>**Ubiquitous LRP1 receptor expression with high levels in brain,</td>
<td>Expression level of TfR in the brain is relatively low compared</td>
</tr>
<tr>
<td>which is substantially increased in hypoxia conditions that are</td>
<td>to other organs, the receptor is normally saturated with Tf in vivo.</td>
</tr>
<tr>
<td>common in malignancy. Brain expression also increased in MS, AD and PD</td>
<td>Much slower endocytosis rate</td>
</tr>
<tr>
<td><strong>Multifunctional receptor</strong>, containing 4 ligand binding clusters,</td>
<td>**Main function of TfR is as carrier protein for Tf to facilitate</td>
</tr>
<tr>
<td>less interference with normal functioning of the receptor</td>
<td><strong>transport of iron into cells</strong>. Competing with Tf binding</td>
</tr>
<tr>
<td><strong>No alteration to payload sequence</strong>, small 12 aa peptide fused</td>
<td><strong>Significant sequence modification</strong> of payload (Ab) required to</td>
</tr>
<tr>
<td>or conjugated to payload, universal application to any payload (Ab,</td>
<td>bind to TfR or addition of large modified binding domain to payload</td>
</tr>
<tr>
<td>enzyme, siRNA, oligo, etc.) - independent validation of technology</td>
<td>(enzyme). Not a universal application to any payload type</td>
</tr>
<tr>
<td><strong>Ownership of platform technology</strong> and freedom to operate across its</td>
<td><strong>Must pay fees or royalties to licensing partners</strong> across all programs</td>
</tr>
<tr>
<td>multiple payload candidates</td>
<td></td>
</tr>
</tbody>
</table>

**Denali Information Sources:**
- Denali S1 Filing: [https://www.sec.gov/Archives/edgar/data/1714899/000119312517340997/d445892ds1.htm](https://www.sec.gov/Archives/edgar/data/1714899/000119312517340997/d445892ds1.htm)
Anticipated Bioasis Pipeline: xB³-001, 002, 007, 008

- **xB³-001**: HER2+ Brain Metastases
  - IND ready: 3/4Q19
- **xB³-002**: Glioblastoma
  - POC: 3/4Q20
- **xB³-007**: Neurodegeneration
  - 4Q18
- **xB³-008**: Lysosomal Storage Diseases
xB³-001: Brain Metastasis

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
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<tbody>
<tr>
<td>Nov</td>
<td>Jan</td>
<td>Mar</td>
</tr>
<tr>
<td>Microdialysis</td>
<td>NHP PET</td>
<td></td>
</tr>
</tbody>
</table>

- Manufacturing
  - FDA pre-IND meeting
  - Non-GMP tox DP material (release)
  - 28 day NHP tox (to final report)
  - Submit IND (Oct 15 2019)
  - FPFV (Nov 15 2019)
• FDA pre-IND (Type B) meeting in October
  • Align with the agency on clinical program strategy and trial design
  • Primary focus of Ph 1 portion:
    o Safety, PK, target engagement and biomarkers
    o Some design options under consideration include:
      ▪ Patient population: HER2+ brain cancer, focus on breast or broaden to all comers with a HER2+ primary tumor?
      ▪ Target engagement: PET, glucose metabolism
      ▪ Pharmacodynamic biomarkers: brain microdialysis, fMRI
      ▪ Aggressive dose escalation protocol with 12-18 patients in Ph 1 escalating 3 dose levels
      ▪ Expansion cohort of 20-30 additional patients at optimal dose
      ▪ End of Ph 1 meeting (EOPI) to align on dose for Ph 2 portion and endpoints for potential early submission
• **Target:** Glioblastoma, one of the most aggressive cancers that originates within the brain, with 80% of diagnosed primary malignant brain tumors are malignant gliomas
  • Deadliest form of brain cancer due to high infiltration of surrounding brain tissues

• **Treatment:** Invasive surgical removal accompanied by subsequent radiation and chemotherapy

• **Glioblastoma mouse model collaboration with Minerva Imaging**
  • Tissue distribution pattern
  • Target engagement and PD biomarker
  • Efficacy
Gaucher’s disease (GD) is caused by mutations in GBA1 gene, that encodes glucocerebrosidase enzyme

- Three types – Type I, II and III; with differing pathologies, morbidities and treatment potential
  - Type I: Most common form, non neuropathic, childhood to adult onset
    - Pathologies – hepatosplenomegaly, thrombocytopenia, anemia, bone abnormalities, all in the peripheral system
    - GCase ERT – effective in controlling pathologies

- Type II: Acute, infantile, neuropathic, associated with brain damage
  - Early onset (3-6 months), severe, rapidly progressing, fatal within 2 years
  - Pathologies: seizures, spasticity, enlarged spleen & liver, poor development
  - Currently no effective treatment

- Type III: Chronic, neuropathic, Late childhood onset, slow progressing into adulthood
  - Pathologies: Type I + seizures, cognitive problems
  - GCase ERT addresses peripheral pathologies; not CNS manifestations due to lack of BBB access
We Have Solved a Significant Problem By Utilizing \( \text{xB}^3 \): 
Multiple Opportunities for Value Creation

- **xB\(^3\) Fusion**
  - Does not change the systemic pharmacokinetics of its payload
  - Demonstrated significant improved and sustained brain exposure of the payload molecule
  - Reduce HER2+ brain mets by 68%
  - Independent Validation: dose dependent efficacy in post systemic administration
  - Improved PK properties

**Time Point: 2hr Post-IV Injection**

*Brain tissue distal to tumors (BDT) & Breast cancer metastasis distributed throughout the brain*

*Nounou et al. Pharm Res. December 2016, 33(12); 2930-2942*
Thank you all for your time
Share Structure
- Basic: 51,741,952
  - Warrants: 5,797,795 (Weighted Average Exercise: $1.00)
- Fully Diluted: 65,865,558

Average Daily Volume (based previous 30 trading days): 69,076

Trading:
- 52 Week (Hi/Low): $1.14/$0.59 / Last (5 April 2018): $0.77

Most Recent Financing:
- 12 April 17: $4,058,457 (gross proceeds)
- 5,797,795 units @ $0.70 (1 common share + 1 warrant)
- 5,797,795 warrants (Exercise: $1.00, 24 months) / Warrant accelerator $1.50 [10 day VWAP]