



BriaCell Therapeutics Corp

Cancer Management through Immunomodulation TSX-V: **BCT** OTCQX: **ANCCF**

September 2015



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Leading Technology: Novel off-the-shelf cancer immunotherapy Right Time: Second Phase I/IIa clinical trial initiating Unique Approach: Targeted therapy via companion diagnostic Large Market Opportunity: \$35BN Immunotherapy market by 2020 Strong Team: Experts in immunotherapy & diagnostics Poised to Unlock Value: Several short- and long-term milestones

BriaCell Management and Board



Management

Dr. Joseph Wagner, President and CEO

- Scientist/entrepreneur with 15 years experience in C-level positions at multiple biotech companies
- President & CEO, OncoCyte Corp., where he led development of 3 cancer diagnostic products currently in trials involving over 2000 patients
- President & CTO, Cell Targeting, Inc., where he led successful acquisition by BioTime, Inc.
- VP, Neuronyx, Inc. where he led first allogeneic cell therapy program for heart disease in program partnered with Johnson & Johnson
- Raised >\$100M in capital in public, private and angel funding rounds as well as >\$20M in non-dilutive grant and collaborative funding

Dr. Charles Wiseman, Founder and CMO

- Oncologist with 45 years experience, pioneered chemotherapies
- Director, Immunotherapy Lab, St. Vincent's
- Chief, Breast Cancer Basic Research Lab, Univ. of Texas MD Anderson Hospital & Tumour Institute
- Assistant Professor, Dept of Molecular Carcinogenesis & Virology, MD Anderson; Acting Chief, Division of Oncology, White Memorial Medical Center, Los Angeles

Dr. Markus Lacher, Director of Research & Development

- Sr. Scientist at NYSE Listed biotech BioTime for 5 years, including time alongside BriaCell CEO Dr. Joseph Wagner a
- Founded T-Cell Therapeutics Inc., a California based biotech dedicated to developing immunotherapies for prostate cancer
- Author of 1st Sequencing of Nuclear DNA of 5 clinical-grade human embryonic stem cell lines, published in Stem Cell Research

Board

Dr. Saeid Babaei, Chairman

- Currently CEO of biotech AbCelex which recently obtained investment from a top agtech/biotech VC in the US
- Vice President, Lorus Therapeutics, where he was responsible for large turnaround including out-licensing a Phase-III cancer immuno-oncology program to a private equity firm in the US
- Director of Corporate Development at Northern Therapeutics, which was successfully partnered to United Therapeutics

Rahoul Sharan, Director and CFO

- Chairman, Potash Ridge, Issuer on TSX with largest Potash asset in USA
- Partner, S&P Group, where he has led financings in excess of \$100M
- Public Accountant at Coopers & Lybrand in tax & audit of large companies

Isaac Maresky, Director

- Responsible for identifying, supporting BriaCell from early development
- Investment Banker, Sunel Securities focused on identifying & executing investments
- Investment banker, Standard Chartered Investment Bank, M&A Group

Immunotherapies: The Way of the Future in the Fight Against Cancer



Immunotherapies are expected to be a more targeted, less toxic approach to managing cancer; more likely to prevent recurrence

"The **Next Wave** in **Cancer**, Immuno-Oncology therapies that harness the body's own immune system to fight cancer have shown exciting promise in **transforming cancer treatment**" -Morgan Stanley

"By 2020, immunotherapies will be treating **60% of all cancers** and earning **\$35b** per year" -Citibank (Head of Healthcare) 2020 – Global immunotherapy market forecasted to reach \$35B (Citigroup)

Dec 18, 2014: Juno NASDAQ IPO \$2B valuation, exceed **\$4B** valuation in < one month

Nov 17, 2014: Pfizer-Merck KgA codevelopment deal for Merck's anti PDL-1. Pfizer pays **\$850M + \$2B in milestones** + equal share of products' profits

June 20, 2014: Kite NASDAQ IPO, \$474mm valuation goes to **\$1B** – engineered autologous T cell therapies from NIH

June 1, 2014: GSK enters deal with Adaptimmune for developing engineered autologous T cells therapies for **\$350M**

2010 - \$1.6B global cancer vaccine market

Aug 23, 2013: AstraZeneca/MedImmune acquires Amplimmune (anti-PD-1) for \$225M + up to \$275M

5

Cancer Immunotherapy



The Story

- Virtually all tumors express "mutant" proteins that should be recognized by immune system as "alien"
- Consistent animals study and human clinical evidence of inducible host versus tumor response
- Clinical studies often demonstrate robust, sometimes Complete Responses in patient subsets

The Reality

- Difficult to predict which patients will demonstrate CR/PR
- Combination treatments may be necessary for real efficacy
- Autologous cellular immunotherapies face significant challenges
- Regardless of challenges, FDA approval and reimbursement pathways are defined for effective cancer immunotherapies



Modular Immunotherapy:

- Cell module
 - Allogeneic "off the shelf" tumor cell
 - Engineered to secrete GM-CSF
- Cytokine module
 - Pretreatment with cyclophosphamide
 - Post-treatment with interferon-α
- Result = Broad activator of host-versus-tumor response at low COGs

Target Population:

- Initially 3rd line treatment for late stage breast cancer
- Ultimate use in early stage cancers sharing antigen profile of vaccine cell
- Maintenance therapy for duration of disease

Proposed Mechanism:

- Activation of innate immune response
- Induction of adaptive immune response
- Modulation of acute vascular inflammatory response

BriaCell's Formula for Clinical Success





BriaCell's BriaVaxTM Vaccine: Development Story



BriaCell is developing a proprietary tumor cell vaccine – BriaVax[™], for patients with advanced breast cancer with potential applicability to other tumor types

BriaVax[™], is the end-result of decades of clinical investigation by Dr. Charles Wiseman, a practicing oncologist with direct patient interaction

BriaVax[™] already has been tested in 2 Phase I studies with positive safety and evidence of efficacy





First Phase I:

- Used unmodified cell line + GM-CSF + cyclophosphamide
- N = 14 late stage, treatment-refractory breast cancer patients
- No significant adverse treatment-associated events, well tolerated
- Median Overall Survival = 12.1 months

Second Phase I:

- Used GM-CSF-engineered cell line + cyclophosphamide + interferon-α
- N = 4 late stage, treatment-refractory breast cancer patients
- No significant adverse treatment-associated events, well tolerated
- Median Overall Survival = 35 months
- One robust responder with >90% regression during treatment, subsequent relapse (upon halting treatment) responded to re-treatment



Tumor Regression – Series-I



Tumor Re-Regression – Series-II





Upcoming Phase-I/II Open Label Clinical Trial

Protocol submitted to FDA:

- A single-center trial enrolling up to 24 late stage-IV breast cancer patients
- Primary objective is to determine safety and tumor response
- Designed with ability to amend the trial to evaluate:
 - Changes in dose and schedule
 - Use in combination with other medications or immunotherapies
 - Application to earlier, more favorable breast cancer categories
 - Application to other HER2 positive solid tumors
 - Application to solid tumors with antigenic marker other than HER2
- Anticipate enrolling first patient = Early Q4 2015







BriaCell Milestones RACELL March 10: Completion and submission of Possible filing of additional Protocol for Phase I/II Clinical Trial for 24 latepatents stage cancer patients to FDA Draft new protocols for additional Phase II/III studies Manufacturing of as counseled by FDA BriaVax for upcoming **Clinical Trial** Today 2016 2015 Q2 Q1 Q3 Q1 Q2 Q3 Q4 Q4 June 1: Hired seasoned biotech veteran Dr. Joseph Wagner June 16: Signed Definitive Agreement of Manufacturing of Initiation of Phase I/II BriaVax under cGMP Facility Interim Data from Phase I/II BriaVax Clinical Trial with University of California, **Clinical Trial Davis Health Center** Presentation of clinical data at major oncology conferences July 15: Hired Dr. Markus Lacher, a senior scientist who previously worked with Dr. Wagner



Approved to Apply Vaccine to Other Cancers

 FDA has already approved BriaCell to test its vaccine on select other cancers for HER-2 positive patients or 15-30% of lung, ovary, prostate, bladder, pancreas, and gastric cancers

 If BriaCell can prove its concept on breast cancer, it intends on testing the vaccine on these cancers as well:

Cancer Type	Annual Mortality	HER-2+ Population	Potential Market	Potential Market	
	Americans only	15-30% of total	at \$200k per treatment	Including non HER-2 breast	
Breast	40,000	8,000	\$1,600,000,000	\$8,000,000,000	
Lung	160,000	24,000	\$4,800,000,000	\$32,000,000,000	
Ovary	33,000	4,950	\$990,000,000	\$6,600,000,000	
Prostate	27,000	4,050	\$810,000,000	\$5,400,000,000	
Bladder	14,000	4,200	\$840,000,000	\$2,800,000,000	
Pancreas	14,000	2,100	\$420,000,000	\$2,800,000,000	
Gastric	10,000	2,000	\$400,000,000	\$2,000,000,000	
Total	298,000	49,300	\$9,860,000,000	\$59,600,000,000	

• Numbers are for **USA alone**, and only include terminal cases (1.6% of cancers)

Numbers do not include:

I. Preventative cases

II. Other cancer types

III. HER-2 Negative patients

Comps: Entering the Market at Ground-Level Valuation



Company	Exchange: Ticker	Market Cap (US \$M)	Phase <i>Most</i> <i>Advanced</i>	Partnership	Notes
Celldex Therapeutics, Inc.	NasdaqGS:CLDX	2,640	Phase III		Therapeutic antibodies, immune system modulators & vaccines
Aduro BioTech, Inc.	NasdaqGS:ADRO	1,724	Phase II		Immunotherapy with modified-listeria mononcytogenes
NewLink Genetics Corp.	NasdaqGM:NLNK	1,558	Phase III		Small molecule immunotherapy for oncology conditions
Northwest Biotherapeutics, Inc.	NasdaqCM:NWBO	927	Phase III		Immunotherapy with dendritic cells loaded with tumor biomarkers
Inovio Pharmaceuticals Inc	NasdaqGS:INO	539	Phase II	Upenn/Merck	Synthetic DNA vaccine based on inactivated or weakened viruses
Oncothyreon Inc. (USA)	NasdaqGS:ONTY	374	Phase III	Merck	Developing L-BLP25 vaccine for non-small cell lung cancer
Compugen Ltd. (USA)	NasdaqGM:CGEN	354	Phase III	Bayer	Antibody-based oncology immunotherapy; recent deal with majors
Galena Biopharma Inc	NasdaqCM:GALE	290	Phase III	Leica/Teva	Node positive HER-2 negative breast cancer
Peregrine Pharmaceuticals	NasdaqCM:PPHM	264	Phase II		Recently completed Phase II second-line non-small cell lung cancer
Trillium Therapeutics	TSX:TR	161	Phase I		Immuno-oncology developing antibody-like fusion protein
Scancell Holdings Plc	AIM:SCLP	95	Phase I/II		SCIB1, plasmid DNA which encodes human antibody for melanoma
ImmunoVaccine Inc.	TSX:IMV	85	Phase I/II		Recent \$5M loan from province of Nova Scotia to begin Phase II
CEL-SCI Corporation	AMEX:CVM	70	Phase III	Teva/Orient	Primary head and neck cancer immunotherapy vaccine
Vical Incorporated	NASDAQ:VICL	61	Phase III		DNA-based immunotherapeutic to stimulate responses to tumours
ImmunoCellular Therapeutics Ltd.	AMEX:IMUC	45	Phase II		Autologous dendritic cell-based vaccines, tumor-associated antigens
Average (All) Average (Phase 1811):		612			
BriaCell Therapeutics Corp	TSXV:BCT	C \$20	Phase I/II		Two Phase I studies done, initiating Phase I/II trial in Q4/15

Precedent Transactions: Majors Entering the Space



Bayer & Compugen August 5th, 2013

Transaction Overview

Size

Bayer (Market Cap: \$95B), a German pharmaceuticals giant, agreed to collaborate with Compugen, a small Israeli based immunotherapy company working on developing its anti-body based cancer therapy; market cap since increased from \$180M to over \$300M GSK, Genentech & Immunocore June 27th & July 9th, 2013

Genentech, a member of the Roche Group (Market Cap: \$223B), announced a research collaboration with London based privately owned Immunocore, to develop their immunotherapy involving T Cell Receptors; Soon after, GlaxoSmithKline (Market Cap: \$128B) announced another collaboration

Up to **\$540M**

- ➤Up front payment of \$10M
- >\$30M for preclinical activities
- > Up to \$500M in milestone payments

Up to **\$850M**; \$530M from GSK

- >\$220M in preclinical milestone payments
- *▶*\$310*M* for commercialization milestones

Up to \$320M from Genentech

- ➤Up front payment of up to \$20M
- >\$300M in commercialization milestones

Capitalization and Latest Financing



	Current outstanding	Exercise price		
Common shares	84,736,316		Market Su	ımmarv
Warrants	13,432,881	\$0.25	(values in Canadia	an Dollars)
Compensation warrants	746,117	\$0.18	Price	\$0.23
Options	288,011	\$0.18	Market Cap	\$19.49M
•	2,325,000	\$0.22	Cash	\$1.91M
	750,000	\$0.22	Debt	\$0.0M
	175,000	\$0.30		
Fully Diluted	103,487,453			

Most Recent Financing

Date Closed	Value	Price	Shares (MM)	Note
27-Nov-2014	\$2.24	\$0.18	12.36	Part of RTO, which closed Nov 27, 2014. Each unit consisted of one common share and one share purchase warrant with a strike price of \$0.25 in the first 12 months and a strike of \$0.35 for the following 24 months.

Collaboration Options: Interest from Top Institutions



Sheba Hospital Largest hospital in the country of Israel



"We are looking forward to further progress in establishing the collaboration"



USC Medical School Discovered first cancer causing oncogene in 1970

Keck School of Medicine of USC

"I enjoyed reviewing your data... the responses in the central nervous system are quite **remarkable**" Established by National Cancer Act of 1971 As 1 of 3 original cancer centers

MDAnderson Cancer Center

Making Cancer History^{*} "Dr. Wiseman demonstrated his skills as an expert clinician... I find the research of **substantial interest**" **Cedars-Sinai** Largest Cancer Care Center In all of Los Angeles



"I believe you have a very **novel** and fascinating finding"

> UC Irvine Health Named top 50 hospitals in US for cancer



Brain metastases seen regress considered "untouchable"



- Developing a fully-patented immunotherapy vaccine for patients with advanced breast cancer with significant near- and long-term milestones on horizon
- Led by by a seasoned management team devoted to efficient execution of corporate and scientific objectives
- Exceptional clinical trial results to date:
 - Patients have responded to the vaccine, lifespan has been extended by up to 5x what would be expected
 - Vaccine has acted rapidly, and has been shown to be completely safe with no side effects
- FDA approved for testing on select other cancers for HER-2 positive patients, increasing BriaCell's target market five-fold
- Advancing the vaccine into the next clinical trial up to 24 late-stage breast cancer patients will be tested in order to further solidify the results achieved to date
- Experienced management team and Board of Directors
- Currently undervalued compared to immuno-oncology peers

BriaCell Therapeutics Corp



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