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Human Vaccines: Profile

ImmunoCellular Therapeutics Ltd.

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John S. Yu is the Founder, Chief Scientific Officer and Chairman of ImmunoCellular.

How and when did your company start, and where are you located?

ImmunoCellular Therapeutics Ltd. (IMUC) was founded in 2006 and is located at 21900 Burbank Blvd, 3rd Floor, Woodland Hills, CA 91367.

How many employees do you have, and how do you find/attract them?

The company has about four full-time employees. Most of the employees were recruited by the CEO or CSO.

What are the main focus and platform technology(ies) of your company?

IMUC has been able to integrate several approaches to treating cancer into its platform technology. The company develops multi-targeted cancer immunotherapies that can eliminate cancer stem cells (CSCs, aka tumor-initiating cells) in addition to normal bulk tumor cells. The technology also utilizes IL12-secreting dendritic cells (DCs) to elicit a highly potent immune response.

Can you provide a short overview of your product pipeline?

The company's lead product (ICT-107) is currently in a multicenter, randomized, double-blind, placebo-controlled phase 2b trial for patients with newly diagnosed glioblastoma multiforme (GBM), a common and aggressive form of brain cancer. IMUC is also developing a CD133-targeted, therapeutic cancer vaccine (ICT-121); a phase 1 study with recurrent GBM patients is planned. Management also anticipates initiating a clinical trial for ovarian cancer with a third cancer vaccine (ICT-140).

Who is your competition, and what advantage(s) does your products/technology offer?

Competitors include Dendreon, Northwest Biotherapeutics, and Prima Biomed. Unlike most other cancer immunotherapy companies, IMUC focuses on developing treatments that target CSCs as well as normal tumor cells. Also, few immunotherapy companies develop treatments that target more than one tumor-associated antigen.

What were the "highlights" in your recent development of vaccines/immunotherapeutics?

Results from a small, uncontrolled, single-center phase 1 study with ICT-107 in newly diagnosed GBM patients showed a survival benefit when compared with historical standard of care (Phuphanich et al. *Cancer Immunol Immunother*, PMID: 22847020). Median overall survival was 38.4 months (vs. 15.8 months for standard of care). Six of sixteen patients survived without any disease recurrence for more than three years.

What have been the most critical problems in developing products in your field, and how can your company's technology help overcome these problems?

The field of cancer immunotherapy has been characterized by several challenges. Many earlier products elicited relatively weak immune responses. In contrast, IMUC uses matured DCs, which secrete IL12, to elicit a potent immune response in patients. IL12 has been shown to be critical for activation of T-cell killing.

What is your company's value proposition?

IMUC has a library of several tumor-associated antigens, which can be mixed and matched to different types of solid tumors. Thus, the company's technology can potentially treat a wide variety of cancers. Management has also been able to significantly reduce manufacturing expenses for its autologous cancer vaccines such that costs are competitive with antibodies and other biologics.

What business development strategy do you pursue?

The company intends to develop cancer immunotherapy candidates to proof-of-concept, where the products can then be out-licensed to larger global and regional oncology partners.

How does your company attract partners?

IMUC has been able to attract the attention of partners with a strong scientific rationale for its approach to treating cancer, by generating promising early-stage clinical results with its lead product candidate, and by conducting a high quality phase 2b clinical trial.

Who are your most important partners?

Current partners include Cedars-Sinai Medical Center, University of Pennsylvania, Aptiv Solutions and Progenitor Cell Therapy.

How do you balance performing work in-house vs out-sourcing?

A significant majority of work is out-sourced to partners, which enables the company to operate very cost-effectively.

What are your product development goals for the next 3 years?

IMUC recently completed enrollment for its ongoing phase 2b ICT-107 study. An interim safety analysis is anticipated as early as Q1/2013 and final results are anticipate in late 2013. Management intends to initiate clinical trials for ICT-121 by the end of the year and for ICT-140 in 2013. Assuming final results from the current phase 2b study are positive, the company plans to launch a pivotal phase 3 study with ICT-107 in newly diagnosed GBM patients (potentially in collaboration with a partner).

For more information, please visit:

http://imuc.com