

OBR POSTER SESSION

by Kerry Ross, PhD

ARIAD Aligns with Bellicum to Develop Novel Vaccine for Prostate Cancer

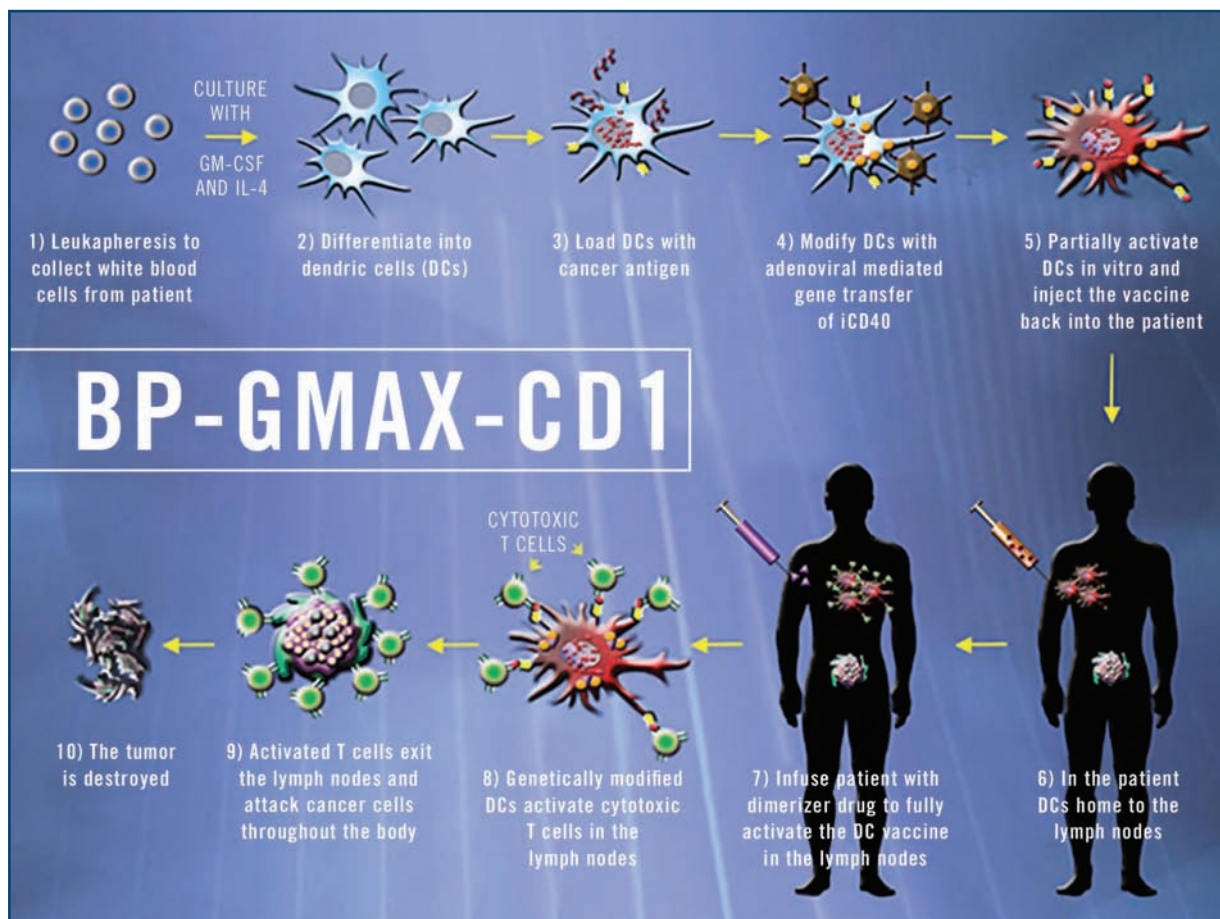


On October 11, 2006 ARIAD announced an alliance with Bellicum Pharmaceuticals where they will provide non-exclusive, royal-bearing licensing to their ARGENT™ cell-signaling regulation technology to develop and market novel cancer therapies. ARIAD will also have an equity stake in Bellicum. The license agreement between Bellicum and ARIAD evolved from an academic collaboration with scientists

at the Baylor College of Medicine in Houston, Texas, led by David M. Spencer, PhD and Kevin M. Slawin, PhD. ARIAD provides access to its ARGENT technology to nearly 500 academic institutions worldwide. This opens avenues for ARIAD to expand its technology and provides academics with state-of-the-art technology to pursue research endeavors.

The product licensed to Bellicum is a small-molecule dimerizer drug, AP1903,

EDITOR'S NOTE: This section was developed to provide OBR readers with important and detailed oncology business briefs.



BP-GMAX-CD1 Mechanism of Action

which is currently indicated for use with Bellicum's unique cancer vaccination technology, BP-GMAX-CD1, to specifically target prostate cancer cells. Beyond this application, the two technologies will join forces at Bellicum to develop antigen-specific vaccinations against other solid tumors. This collaboration is an exciting opportunity for both companies as it provides Bellicum the technology it needs to specifically target its cancer vaccine and allows ARIAD to maximize the value of ARGENT cell-signaling technology and to expand its clinical applications.

Bellicum Technology

Bellicum's vaccine technology is indicated for androgen-independent prostate cancer (AIPC), a progressive form of prostate cancer with limited treatment options. Docetaxel chemotherapy which has low efficacy (median survival of 2 months) and high toxicity (fatigue, infections, hair loss, and neuropathy), is the first-line agent of choice for AIPC treatment.

BP-GMAX-CD1, Bellicum's first cell-based vaccination product, is currently in preclinical trials. BP-GMAX-CD1 vaccine technology uses genetically modified host dendritic cells (gmDCs) to express an inducible costimulatory CD40 receptor. After genetic modification, the gmDCs are loaded with tumor-specific antigen and injected back into the host. Twenty-four hours after vaccination the gmDCs are activated by ARIAD's dimerizer agent AP1903. By this time, the gmDCs have had plenty of time to travel to lymph nodes. The AP1903-activated gmDCs in turn activate cytotoxic T-cells within the lymph nodes. The T-cells then exit the lymph nodes to attack and kill cancer cells throughout the body.

The unique advantage of Bellicum's vaccination technology compared with standard vaccination technologies is that vaccine activation is tailored to occur at a specific time and location in the body. This added benefit, along with tumor specificity, is expected to enhance low efficacy profiles of current experimental cancer vaccinations.

Current efforts with the BP-GMAX-CD1 application are focused on aggressive forms of prostate cancer. However, Bellicum has plans to apply its vaccination technology using tumor-specific antigens to the treatment of other solid tumors in either early- or late-stage disease, including breast, colon, and lung cancers.

ARIAD's ARGENT Cell-Signaling Technology

ARIAD is focused on developing therapies for aggressive and late-stage cancers which are difficult to treat and where commercially available options are limited. The company's technology is based on regulating cancer cell-signaling with small molecules that inhibit cell growth and prevent metastasis to other sites.

ARIAD's lead candidate drug, AP23573, specifically targets and inhibits mTOR, and is currently in clinical trials for the treatment of advanced cancers including sarcomas, prostate, endometrial, glioblastoma, and leukemia/lymphoma. Beyond cancer, AP23573 is being explored for activity in cardiovascular disease to prevent restenosis following angioplasty. Medinol Ltd. has a license agreement with ARIAD to develop this technology.

ARIAD's ARGENT cell-signaling technology uses small molecules called dimerizers that are designed to specifically bind two protein targets to elicit dimerization. The goal of the technology is to control cell-signaling pathways and to elucidate desired biological effects.

AP1903 was originally designed as a unique T-cell suicide drug that elicits dimerization of the intracellular portion of the human Fas receptor to initiate Fas-dependent cell death (Iulucci JD, Oliver SD, Morely S, et al. *J Clin Pharm.* 2001;41:870-879). AP1903 has already completed a Phase I clinical trial and results show no toxicity in healthy males. In the Bellicum vaccination system, CD40 was engineered to contain the specific amino acid sequence of the Fas receptor protein binding domain that is targeted by AP1903. KR

>>OBR DAILY NEWS FLASH

November 20 - Roche Holding AG's anemia drug Mircera matched rival treatments in correcting the hemoglobin and red bloodcell count of people with chronic kidney disease while reducing the frequency of treatments needed, according to two new studies (Bloomberg online).