

Scientific Abstract of Protocol AGS-003-004

Argos Therapeutics, Inc., a biotech start-up company co-founded by 2007 Lasker Awardee Ralph Steinman, PhD, is developing AGS-003, an investigational cell therapy based on proprietary technology (Arcelis™) for ribonucleic acid (RNA)-electroporated dendritic cells (DCs) for cancer immunotherapy. Arcelis™ is currently in clinical development as an immunotherapeutic for renal cell carcinoma (RCC) and other oncology indications, e.g., chronic lymphocytic leukemia (CLL), pancreatic cancer. Argos has an active IND, BB-IND-10,960, which has been reviewed by the Cell Therapy Branch of the Office of Cellular, Tissue and Gene Therapy (OCTGT) at FDA, as well as by the Biologics and Genetic Therapies Directorate (BGTD) at Health Canada, for the clinical study of Arcelis™ in RCC subjects.

Argos has completed an initial phase I/II study of its cellular immunotherapeutic in RCC. The study successfully demonstrated favorable tolerability of Arcelis™ treatments since there were no serious or worse than Grade 2 (i.e. moderate) drug related adverse events, per the Common Terminology for Adverse Events Criteria, NCI. Disease progression and overall median survival data from the study were encouraging at 7 months median progression free survival and 25 months median overall survival. The primary objective of the current study, Protocol AGS-003-004, is to evaluate clinical and immune responses to Arcelis™ using a two-stage design. During Stage 1, approximately 24 subjects are being recruited with the intent to have 18 subjects evaluable for primary and secondary endpoints. If at least 3 subjects experience partial remissions or complete remissions (confirmed per Response Evaluation Criteria in Solid Tumors, NCI), the study will proceed to Stage 2. During Stage 2, approximately 22 subjects will be added in order to obtain a total of 35 evaluable subjects for the study.

Arcelis™ uses DCs generated from each subjects' own peripheral blood mononuclear cells that are matured with "inflammatory mediators" and then electroporated with autologous RCC RNA acquired from that subject's tumor specimen. The DCs are also co-electroporated with cluster of differentiation 40 ligand (CD40L) RNA. CD40 protein is expressed by DCs, and CD40/CD40L ligation is required for full maturation of DCs. Electroporating DCs with tumor-derived RNA offers advantages over the use of other antigen platforms, such as peptides or deoxyribonucleic acid (DNA). The use of amplified tumor RNA allows application of the Arcelis™ technology to tumors for which there are only very small amounts available and for which no tumor-specific target antigen has been identified. It also overcomes concerns that highly immunogenic tumor antigens may be missed by immunotherapeutics limited to specific peptides. Successful demonstration of the feasibility and efficacy of Arcelis™ would open the door to putative well-tolerated patient-specific anti-tumor therapies employing serial treatments using RNA from single or even multiple primary or metastatic tumor sites.