



December 3rd, 2015
Press Release



Single Variable Domain-TCRs: Innovative Targeting Solutions Inc. Introduces Novel Scaffold for T-cell Therapies.

December 3rd, 2015: Innovative Targeting Solutions Inc. (ITS) announces the launch of single variable domain T-cell receptors (svd-TCRs), a novel therapeutic modality for the purposes of targeting MHC/peptide complexes. The ability to target cells based on the intracellular proteome opens up enormous opportunities and represents a significant advance for biologic therapies. ITS has previously used its HuTARG™ platform to generate fully human TCR-like monoclonal antibodies (T-MABs) and fully human TCRs that bind to specific MHC/peptide complexes. Now the company has applied its HuTARG™ platform to the de novo generation of large repertoires of svd-TCRs for drug discovery and has isolated first-in-class svd-TCRs specific to MHC complexes that contain the NY-ESO peptide. Svd-TCRs are small single domain molecules that overcome the challenges of utilizing natural heterodimeric T-cell receptors; the scaffold can be easily engineered as a fusion protein or engineered as a chimeric antigen receptor (CAR). Not only will svd-TCRs have utility in T-cell therapies for cancer but also for T-cell redirected applications and future applications where specific cell types are targeted to sites of inflammation or healing to modify the disease process.

ITS believes that its mammalian cell-based platform gives it a unique competitive advantage for cell based therapies; the HuTARG™ technology generates large de novo repertoires from a single chromosomal site with high and uniform expression allowing large numbers of drug candidates to be assessed simultaneously in the context of a mammalian cell. ITS is a pioneer in exploiting the emerging mammalian display format for engineering biologics. Historically display technologies utilized bacteria, phage and yeast due to the high transformation efficiencies in these organisms. ITS has revolutionized library generation by eliminating transformation altogether and has engineered cells that generate diversity de novo. In fact, because diversity is generated within the cell, the cloning of and manipulation of large recombinant libraries is no longer required. In addition to making it dramatically easier to generate diverse repertoires the HuTARG™ platform also has the advantage that scaffolds are expressed in a mammalian system allowing for high expression and manufacturability to be evaluated as part of all screens.

The HuTARG™ platform is extremely versatile. In addition to generating antibodies with ultra-rare specificities (GPCRs, ion channels, and MHC/peptide complexes), the technology has been applied to engineering T-cell receptors and now the identification of a new svd-TCR scaffold. The mammalian-based format provides significant advantages and ITS feels that it has just begun to tap into the discovery potential of the platform.

Data to be presented on Dec 7th at IBC's Annual Antibody Engineering and Therapeutics Conference

About Innovative Targeting Solutions Inc.

Founded in 2008, Innovative Targeting Solutions Inc. is a privately-held company that has developed the HuTARG™ technology, a next generation protein engineering platform for the generation and maturation of fully human protein-based therapeutics. The HuTARG™ technology is a fully mammalian technology that generates diversity de novo via RAG1/RAG2-mediated V(D)J recombination. For more information please visit www.innovativetargeting.com

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