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Press Release



Innovative Targeting Solutions' HuTARG™ Protein Engineering Platform Provides Unprecedented Capabilities for the Engineering of Fully Human T-cell Receptors (TCRs)

Oct 5th, 2015: Harnessing Nature's Most Powerful Repertoire Generating System for use in the Engineering of T-cell Therapies.

Innovative Targeting Solutions Inc. has extended its HuTARG™ technology to the engineering of cell-based therapies and announces that its TCR engineering platform is complete. ITS has applied its fully human TCR platform to generate a panel of fully human T-cell receptors specific to the MHC *A02:01/NY-ESO-1 peptide complex. Innovative Targeting Solutions Inc. believes that the HuTARG™ TCR engineering platform surpasses all other available approaches and technologies for engineering full human TCRs; it is able to generate the largest in vitro fully human repertoires as full length membrane expressed TCRs, avidity based binding provides for unparalleled sensitivity and allows cross-reactivity at even low micromolar affinities to be determined to eliminate binders with off target specificities; as a mammalian platform expression is evaluated simultaneously with binding and allows for the generation of 100s of millions of variants to improve affinity or modify specificity.

ITS has previously exploited V(D)J recombination to make first-in-class fully human antibodies and HCAbs (heavy chain only antibodies); in addition to making antibodies to GPCRs, ITS has also generated fully human antibodies able to specifically recognize MHC/peptide complexes (T-MABs). Innovative Targeting is now moving beyond the engineering of soluble proteins and is poised to be a leader in the engineering of cell-based therapies. Because the HuTARG™ technology is a cell-based engineering platform it is ideally suited to engineering cell-based therapies. The HuTARG™ platform generates 100s of millions of engineered cells and can directly assess the binding on the cell surface, at the single cell level, as opposed to using solution based binding as a surrogate. ITS' real breakthrough, however, resides in the technologies ability generate vast de novo repertoires of TCRs and incorporate functional readouts that will allow for not just binding but signaling to be used to identify the most relevant therapeutic leads.

“Innovative Targeting Solutions' cell based engineering HuTARG™ platform places the company in a unique position to be a leader in engineering T-cells and NK (natural killer) cells as future therapeutics”, said Michael Gallo, President of ITS “the next step for the company is to establish a partnership so that we can fully exploit the advancements we are making with the engineering of TCRs, CARs and T-MABs in this new exciting therapeutic area.”

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 in vitro via RAG1/RAG2 mediated V(D)J recombination. For more information please visit

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