Tissue Regeneration Therapeutics engineered mesenchymal stromal cells advance monoclonal antibody therapy

Toronto, Canada, August 15th 2016: Tissue Regeneration Therapeutics Inc. (TRT) today announced that a team of Canadian researchers have for the first time shown that TRT's engineered mesenchymal stromal cell product (eTXP) can be used to deliver therapeutically useful monoclonal antibodies (mAbs) more effectively than administration of the mAbs themselves. The study appears this month, as a featured paper, in the journal *Stem Cells Translational Medicine.*

The compelling evidence is from work carried out at the research laboratories of Defense Research & Development Canada - Suffield Research Centre, Alberta, Canada (DRDC-s), in conjunction with the University of Toronto utilizing TRT's internationally patent protected technology.

The first author Dr. Lorena Braid (now at Aurora BioSolutions, Medicine Hat, Alberta), Drs. Wei-Gang Hu and Les Nagata, of DRDC-s and Professor John E Davies at the University of Toronto and President & CEO of TRT, employed the eTXP cells isolated from human umbilical cord perivascular tissue, and engineered them by adding a gene encoding a humanized Venezuelan equine encephalitis virus (VEEV)-neutralizing antibody (anti-VEEV). They then compared the effectiveness of treatment comprising the purified antibody to one using the gene-modified eTXP cells as a delivery vehicle for the anti-VEEV in mice exposed to a virulent form of the mosquito-borne VEEV pathogen. The results show that, unlike the control cohorts, all animals injected with gene-modified cells survived the challenge.

The authors report that they expect HUCPVC-mediated gene therapy to "provide a broad-spectrum solution for stealth delivery of therapies for a range of applications and biologics, including delivery of additional medical countermeasures for biological and chemical defence purposes." Dr. Davies added "Monoclonal antibodies are among the most expensive drugs in today's therapeutic armamentarium, and many require high frequency administration. This proof-of-concept study has wide-ranging implications for the extended delivery of mAbs for many indications including inflammatory diseases and oncology."

Anthony Atala, M.D., Editor-in-Chief of STEM CELLS Translational Medicine and director of the Wake Forest Institute for Regenerative Medicine commented, "This is the first study to describe engineered mesenchymal stromal cells as vehicles to deliver disease antibodies. The advantages of this approach include that a single dose could potentially provide immunity."

The full article, "Engineered mesenchymal cells improve passive immune protection against lethal Venezuelan equine encephalitis virus exposure," can be accessed at: http://stemcellstm.alphamedpress.org/content/early/2016/06/22/sctm.2015-0341.abstract

About TRT

TRT is a Canadian Controlled Private Corporation with a focus on the commercial development of their patented Human Umbilical Cord PeriVascular Cell (HUCPVC) platform technology and its TXP and eTXP cell therapy products. TRT is the only company in the world to have issued and allowed patents in the USA, Europe and Australasia, for extraction of these unique cells from umbilical cord tissue. TRT provides license opportunities to collaborating partner companies in the regenerative medicine, defense, and family banking sectors. Additional information is available at: http://www.verypowerfulbiology.com