Delivery of TLR7 agonists by Deep-Primed™ T cells induces immune activation and improves anti-tumor activity in mice while circumventing systemic toxicity

Boesch, Austin; Rybakin, Vasily; Westcott, Nathan; Hwang, Ji Young; Jørgensen, Kira; Lassen, Rasmus; Kræmer, Martin; Bak, Martin; Veiga, Gael; Bruun, Jonas

Publication date: 2019

Document Version
Publisher's PDF, also known as Version of record

Citation (APA):
Presented at the Society for Immunotherapy of Cancer (SITC) 34th Annual Meeting November 6-10, 2019 National Harbor, MD

Delivery of TLR7 agonists by Deep-Primed™ T cells induces immune activation and improves anti-tumor activity in mice while circumventing systemic toxicity

Austin Boesch1, Vasily Rybakin1, Nathan Westcott2, Ji Young Hung1, Kira Jørgensen2, Rasmus Lassen1, Martin Kraemer2, Martin Bak2, Gae Veiga3, Jonas Brun1, Carlos Tassa1, Harrison Root1, Manny Sequeira1, Glenn Leary1, Santina Caruso1, Becker Hewes1, Jonathan Fitzgerald1, Karsten Sauer1, Thomas Andresen1

1Torque Therapeutics, Cambridge, MA; 2Technical University of Denmark, Lyngby, Denmark; 3Presenting author

Key findings
- Torque’s Deep-Primed T cells promote tumor growth inhibition and host extend survival over controls in the murine B16-F10 model.
- Deep-Primed T cell-mediated agonist delivery increased pDCs in draining lymph nodes and endogenous CD8 T cells in tumors, consistent with the known effects of TLR7 agonists in vivo (Mourias et al. 2008).
- Deep-Primed T cell-mediated agonist delivery increased MDCS content in the TME, which may be beneficial given TLR7 agonist is known to convert MDCs into functional APCs (Spinetti et al. 2016).
- Deep-Primed T cells caused no significant weight loss. Transient plasma levels of pro-inflammatory cytokines (TNFα and IL-6) were not shown, remained below 5% of known toxic levels (Sorenson et al. 2014; Baudard et al. 2009, Toda et al. 1996). This suggests that our Deep-Primed T cell therapy has the potential to be efficacious and well tolerated.