**BACKGROUND**

- Colorectal cancer (CRC) is the second cause of cancer mortality worldwide.
- Unmet medical need in immunotherapy is high for MSS patients and still present for MSI-H/dMMR patients. Tumor plasticity and treatment resistance are the main drivers of patient’s relapse.
- Brenus Pharma has developed a patented platform generating innovative therapeutic cancer vaccine based on Stimulated Tumor Cells (STC): STC-1010, lead candidate targeting CRC, educating the immune system to target and eliminate patient’s tumor cells harboring mechanism of relapse.
- This technology has already shown efficacy in immune competent mouse models.

**VACCINE CHARACTERIZATION**

**TRANSCRIPTOMIC**

- **RCB Raw Cell Bank** (not exposed to stimulation)
- **MCB Master Cell Bank** (RCB + serum depletion)
- **DSA Drug Substance with physical stimulation**
- **DSM Drug Substance with chemical stimulation**

**PROTEOMIC**

- The transcriptomic and proteomic analysis demonstrate that each of the physical and chemical stresses, modified protein expression which confirms the rationale for using 3 cell lines with 2 stresses to cover the heterogeneity of the CRC.

**METHODS**

**EX Vivo Model**: Step 1: DC Priming & Maturation after STC-1010

**In Vivo Model**: Immune System Activation & Metastatic Reduction after STC-1010

**RESULTS**

**Ex vivo results:**

- **STC-1010 human vaccine induces an immunostimulatory response on human monocyte-derived dendritic cells (moDCs) with the increase of IL-12 and the decrease of IL-10, mediated by DCs and STC-1010 primed DCs**

**CONCLUSION**

- **Brenus STC-1010 therapeutic vaccine combining 3 stimulated cell lines (LoVo, HCT116 and HT-29) stressed and haptencized, allows to form an immunogenic complex covering the CRC heterogeneity.**
- **These ex-vivo and in-vivo assay confirms the specificity of the immune response induced by Brenus Pharma STC therapeutic vaccine and validates the strong anti-tumor efficacy against human CRC cell lines, without inducing toxicity.**
- **Our results showed that STC-1010 is an efficient strategy to educate the immune system against various targets linked to tumor plasticity and promote CRC cell death.**