

BACKGROUND

- Colorectal cancer (CRC) is the **second leading cause of cancer-related deaths 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 develops a **therapeutic cancer vaccine based on Stimulated Tumor Cells (STC)**: STC-1010 to educate the immune system to target patient's tumor cells harboring mechanism of relapse.
- This technology has already shown **efficacy in immunocompetent mouse models** and **in ovo Chorio-allantoic model (CAM)**.

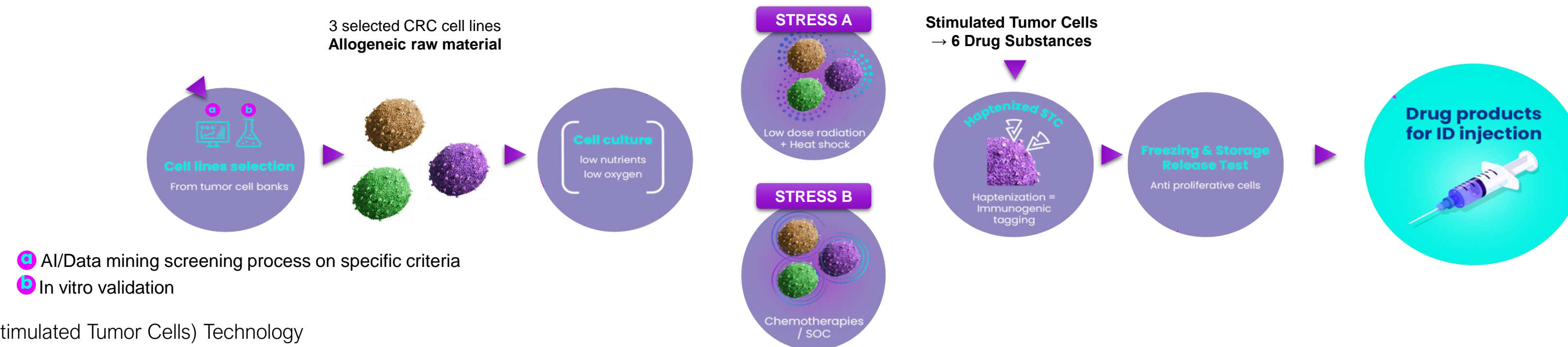


Fig 1. STC (Stimulated Tumor Cells) Technology

METHODS

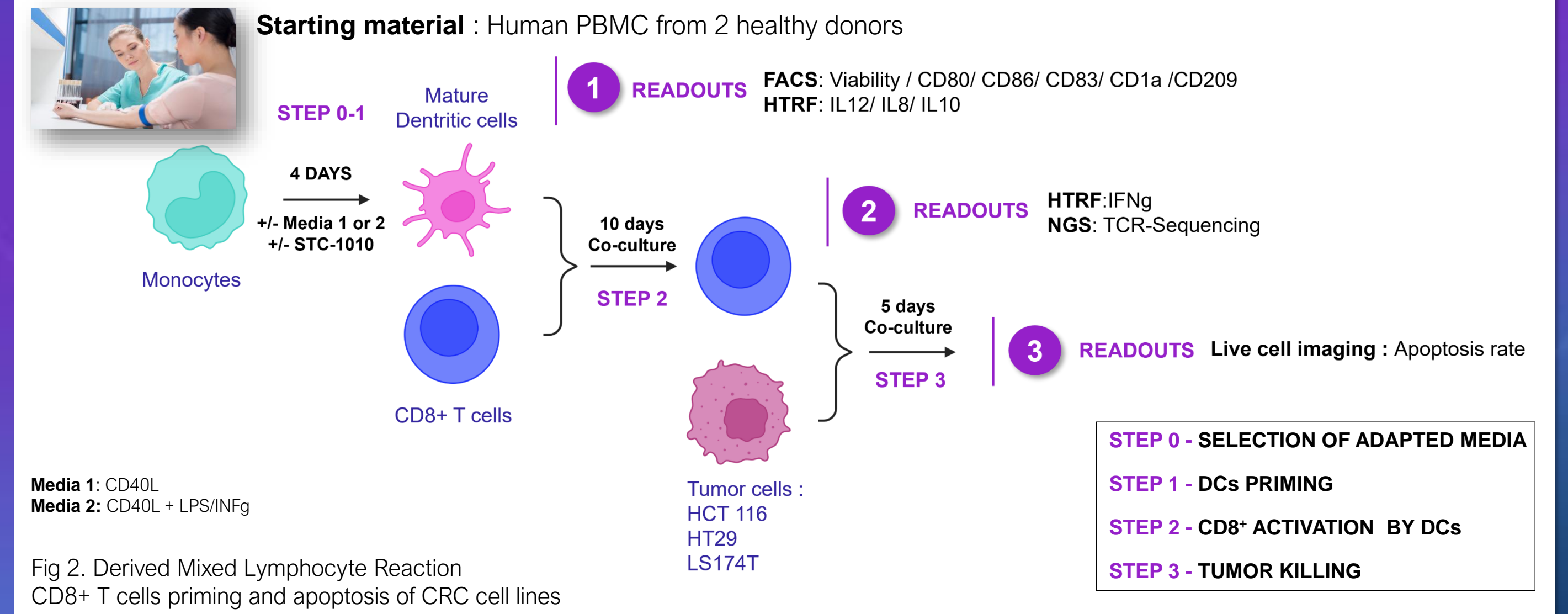
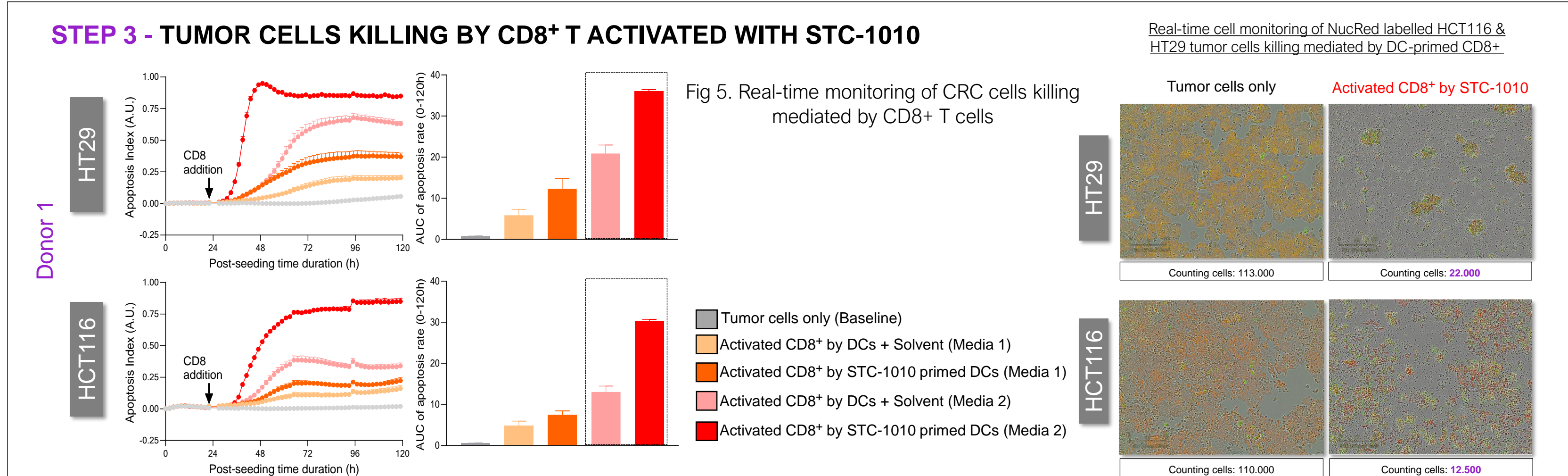
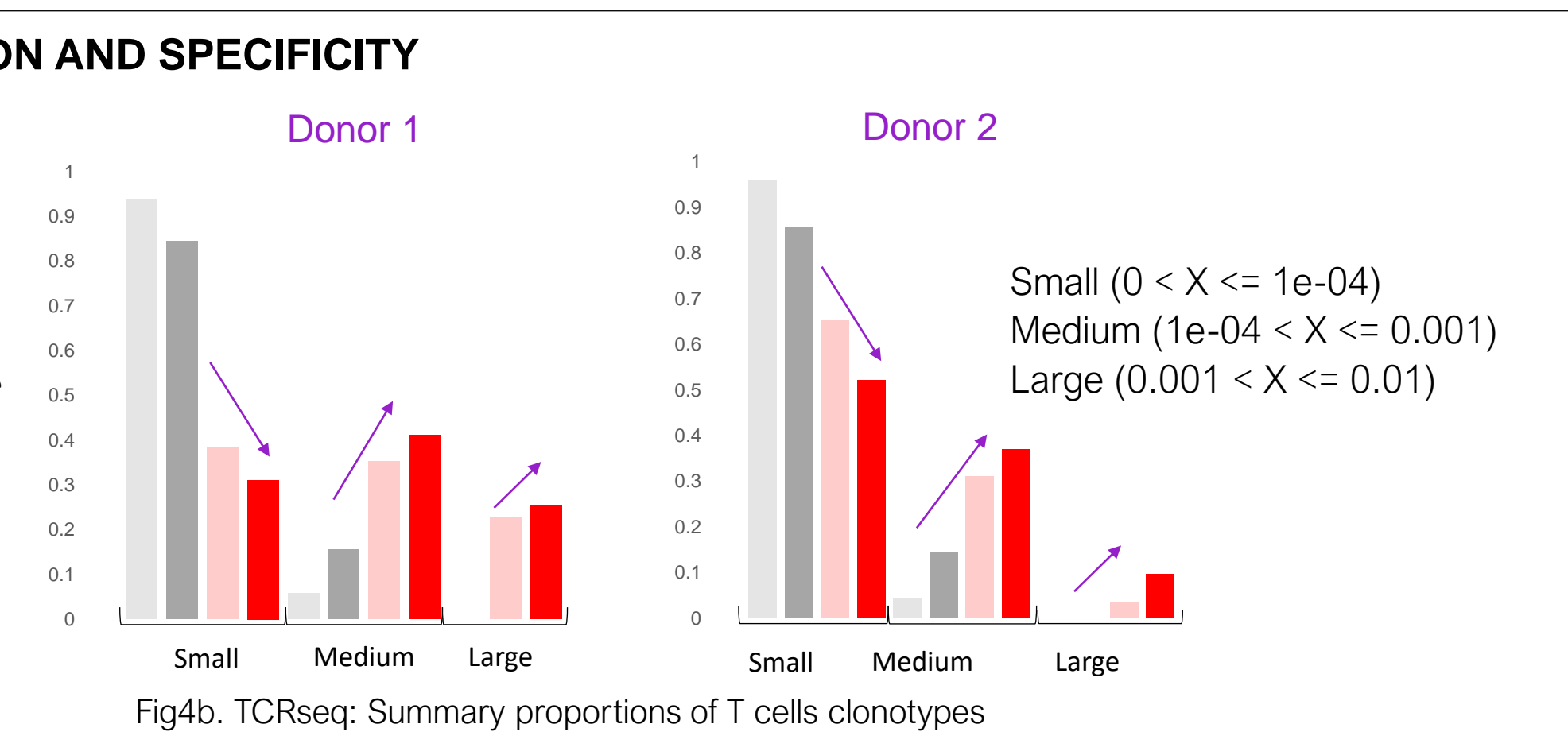
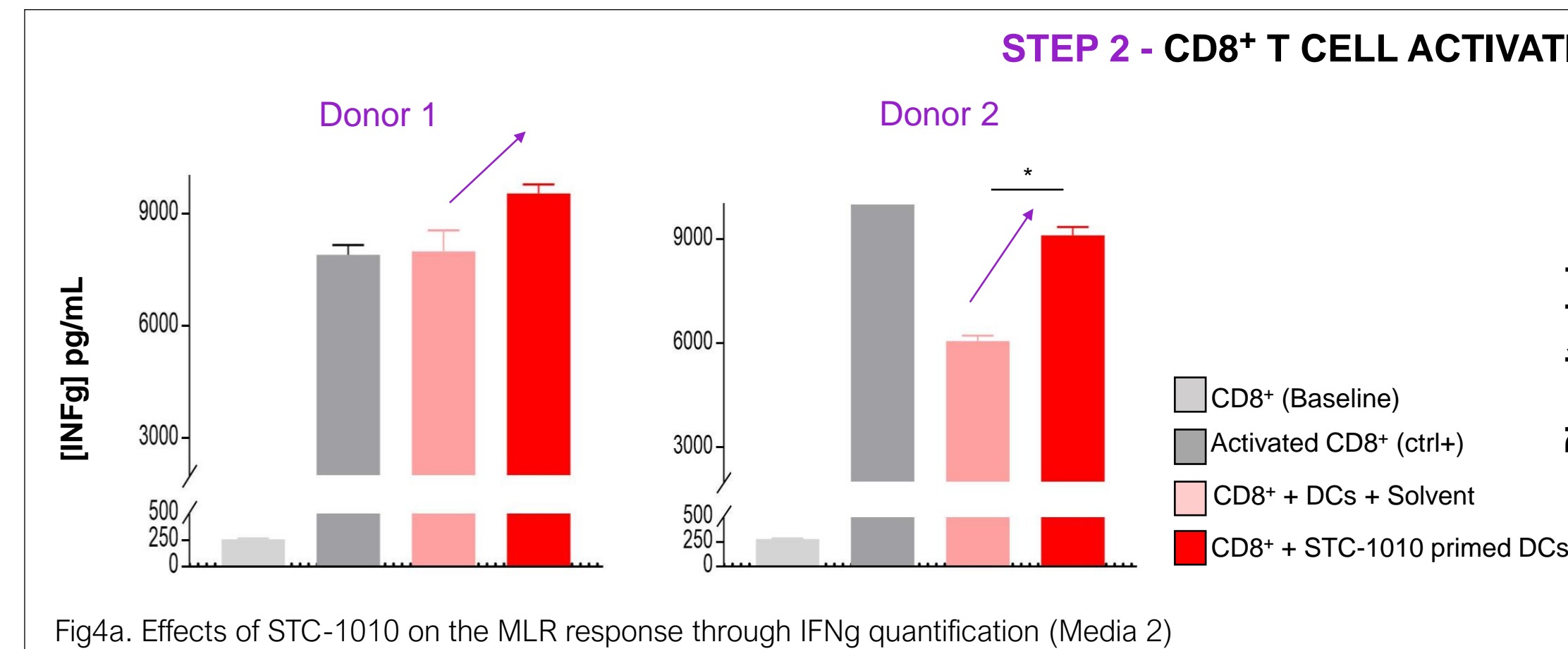
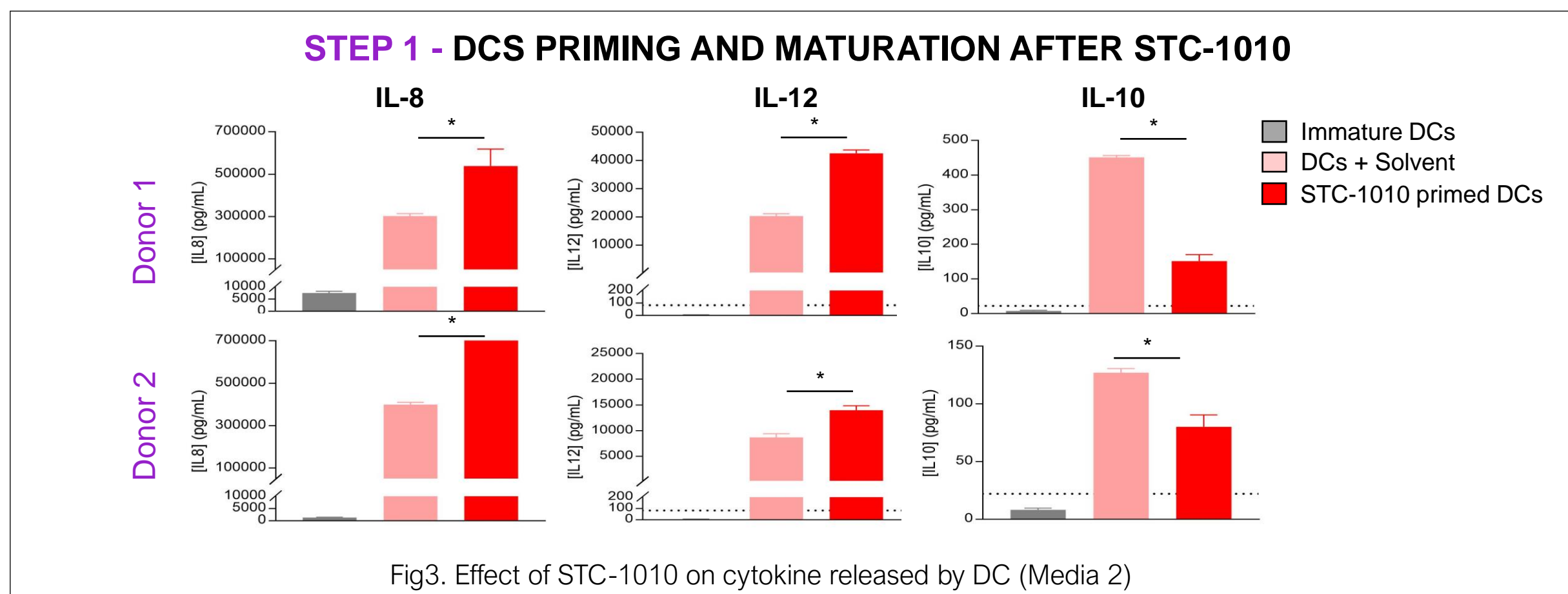


Fig 2. Derived Mixed Lymphocyte Reaction CD8+ T cells priming and apoptosis of CRC cell lines

RESULTS



- Dendritic cells (DCs) are activated by the STC-1010 human vaccine, (increase IL12,IL8, decrease IL10) with no viability issue (Fig3)
- Significant immunological activation of CD8+ T cells, by DCs primed with STC-1010 observed with [IFNg] increase (Fig 4.a)
- Increase of the clonality index and the number of medium & large CD8+ T cells clones, after the education by STC-1010 (TCR sequencing) in favor of an **increased selectivity of specific CD8+ T cells** due to STC-1010 (Fig4.b)
- Antitumor effect of CD8+ T cells activated with STC-1010-primed DCs against 2 different human CRC cell lines was observed with massive apoptosis & large reduction of tumor cells viability (90% HCT116 – 80% HT29). Media 2 reproduces better the *ex vivo* immunocompetency (Fig5)

CONCLUSION

This *ex vivo* assay confirms the specificity of the immune response induced by Brenus STC approach and validates the strong efficacy on human colorectal tumor cell lines. This model presents similar data to our previous and different preclinical models and proves the potential of the STC-1010 to be transposed into clinical setting for the treatment of patients with CRC. This model has the benefit to comply with the FDA's modernization act 2.0 S. 5002.