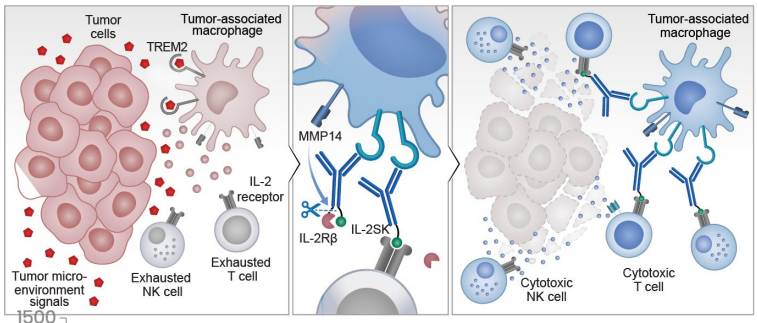
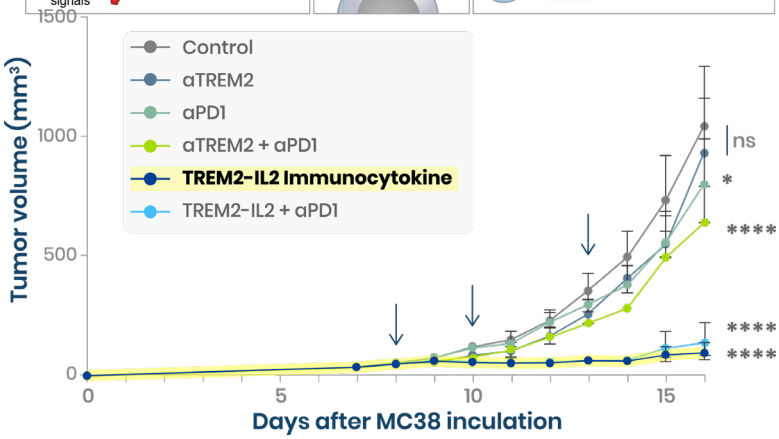
TREM2-IL2 Immunocytokine for the treatment of solid tumors

Therapeutics

Reference Number: **2418** \ Principal Investigator: **Prof. Ido Amit** \ Patent Status: **PCT/US25/44397**

Many solid tumors evade immune attack through tumor-associated macrophages (TAMs) that suppress T-cell activity. We designed a TREM2-IL2 immunocytokine with robust anti-tumor activity achieved by inhibition of tumor-associated macrophages, boosted by local activation of T and NK cells through IL-2. Drug safety is ensured by local IL-2 activation only in the tumor microenvironment. TREM2-IL2 is designed to overcome key resistance mechanisms and show efficacy in refractory tumors.





APPLICATIONS

- Immunotherapy for solid tumors, including immune-checkpoint-inhibitor (ICI)-resistant cancers
- Combination therapy with anti-PD-1/PD-L1 or other immune modulators

DEVELOPMENT STAGE

- Demonstrated potent monotherapy anti-tumor efficacy in MC38 colorectal cancer and MCA205 fibrosarcoma mouse models with no toxicities or off-target immune activation
- Validated by scRNA-seq and various functional assays demonstrating potent myeloid, T and NK cell activation in patient-derived tumor fragments from renal cell carcinoma (RCC) patients

DIFFERENTIATION

Dual mechanism: combines TREM2 blockade with localized cytokine activation

Tumor-restricted activity: activated only by a TAM protease (MMP14)

Superior efficacy: outperforms PD-1 or TREM2 monotherapies or combination therapy

Safe and potent: strong anti-tumor effects without cytokine-induced toxicity

REFERENCES

- von Locquenghien et al, Cell, 2025