

# Solupore<sup>®</sup> demonstrates superior cellular avidity which is essential for optimising cell therapy processes

Cell avidity is the cumulative strength of cellular interactions between interacting cell pairs. This has been shown to be a good predictor of CAR-T cell functionality<sup>1-4</sup>. Traditional electroporation methods used for CAR-T cell transfection can limit cell health and subsequently, functionality. Here, we demonstrate how a new physico-chemical transfection method called Solupore improves the health of T-cells by measuring cell avidity as a readout during preclinical manufacturing.

## The z-Movi<sup>®</sup> Cell Avidity Analyzer Cell Avidity measurement workflow

The z-Movi<sup>®</sup> Cell Avidity Analyzer measures cell avidity by first allowing CAR-T cells to interact with a monolayer of target cells. Subsequently, an acoustic force ramp is applied to pull the CAR-T cells vertically towards the acoustic node.

The force required to separate the cells from the target-cell monolayer directly correlates with the cell avidity of the assessed CAR-T cell population.

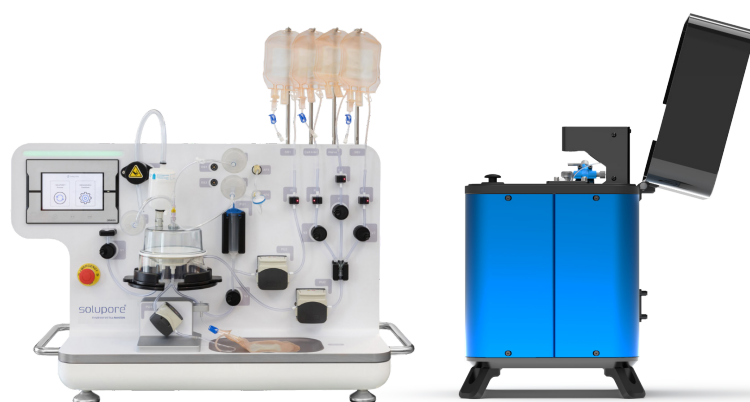
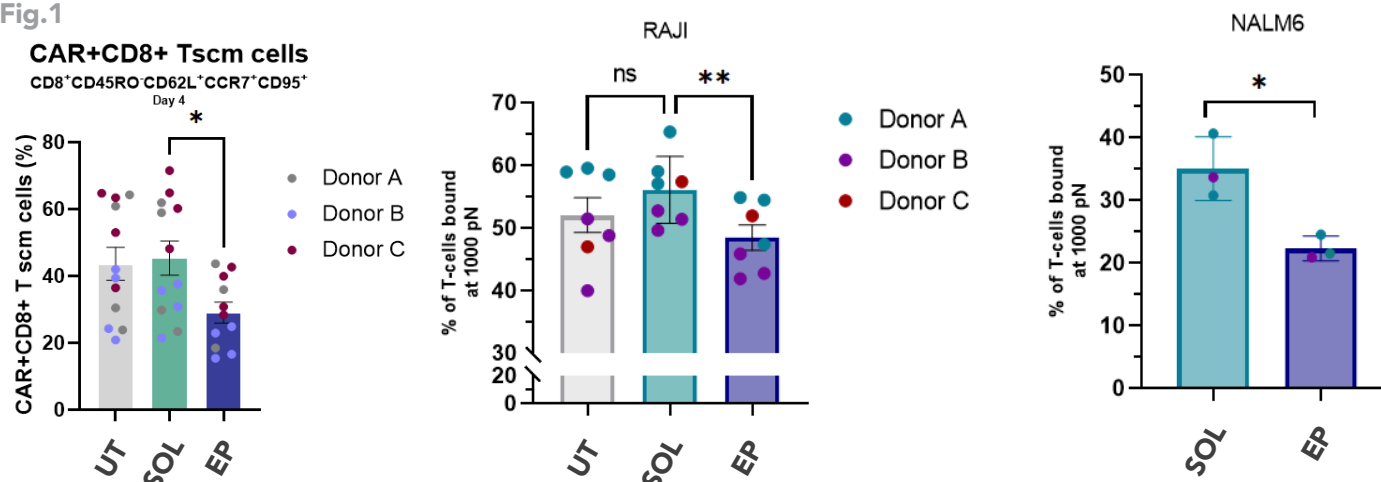


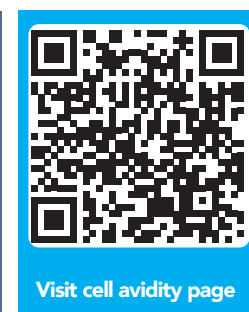
Fig.1



## RESULTS

In this work, Solupore transfected CAR-T cells demonstrated significantly increased cell avidity to RAJI and NALM6 tumour cell targets (Figure 1) compared to electroporated CAR-T samples, with untransfected CAR-T cells as a control (UT). N=3 donors +/-SEM.

The improved cell avidity of Solupore-treated T-cells to tumour targets correlates strongly with in vitro cytotoxic killing and the eradication of tumours *in vivo*<sup>1</sup>. Improved cell avidity is a key marker of improved cell health and has been demonstrated to have a strong correlation to in vivo efficacy across numerous published CAR-T studies.<sup>2-4</sup>



## References

1. Kavanagh, H., et al., *Cytotherapy*, 2021.
2. Larson et al., *Nature*, 2022
3. Leick et al., *Cancer Cell*, 2022.
4. Katsarou et al., *Science Translational Medicine*, 2021.