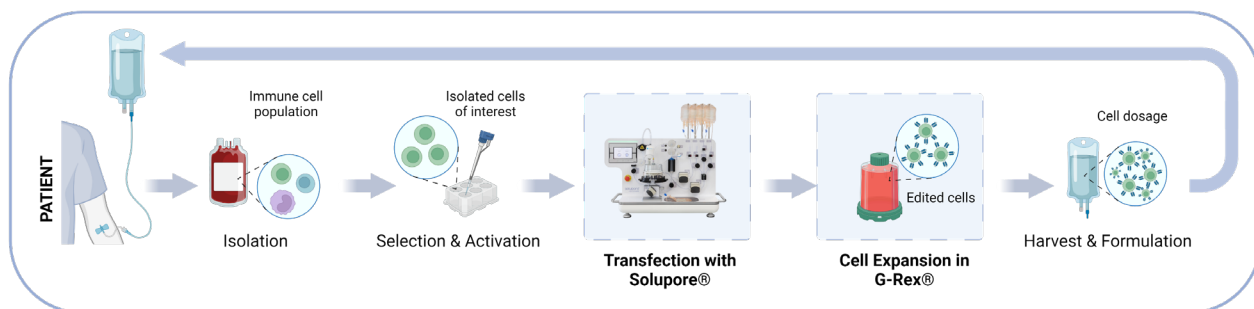


Solupore® Triple Knock-Out Transfected T cell Expansion Equivalent to Untransfected in G-Rex Platform

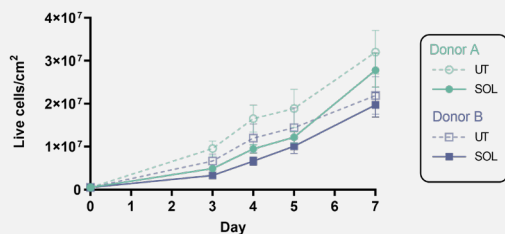
Solupore® is an automated, closed non-viral delivery platform available for cell engineering. Solupore utilizes a gentle and rapid physico-chemical transfection technology, which maintains superior cell health and function. In this application, the health of Triple Knock-Out (KO) transfected T-cells was evaluated by measuring cell expansion and viability in a Gas Permeable Rapid Expansion (G-Rex®) platform using different cell culture media and cytokine supplements.



Results

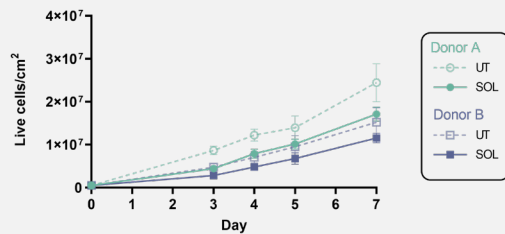
Media supplemented with IL-7 & IL-15

1a

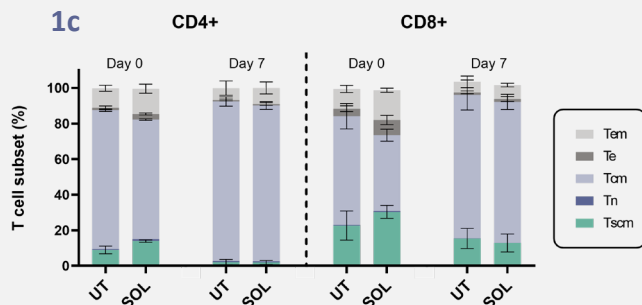


Media supplemented with IL-2

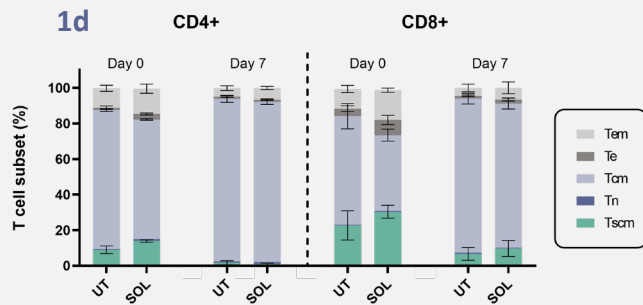
1b



1c



1d



Impact of Solupore on T cell proliferation (Figure 1a & 1b) and CD4+ and CD8+ T cell memory phenotype (Figure 1c & 1d) 7 days post-transfection. Solupore (SOL) multiplex Triple KO transfected T cells demonstrated comparable cell expansion to untransfected cells (UT) with the addition of IL-7* and IL-15* cytokines or IL-2 alone (Figure 1a & 1b respectively, N=2 donors, mean $\pm$ SD). Solupore-transfected T cells retained a stem cell memory (Tscm) fraction comparable to untransfected cells after 7-day G-Rex expansion in media with IL-7 and IL-15 cytokines or IL-2 alone (Figure 1c & 1d respectively, N=2 donors, %mean $\pm$ SD). Solupore-transfected cells (Triple KO efficiency of 51.5%) maintain high viability immediately post-transfection (87.4% mean viability N=2 donors) and $\geq$ 98% viability for 3-7 days expansion in G-rex (post-transfection).

*IL-7 and IL-15 are the Bio-Techne RUO to GMP translatable cytokines of the ScaleReady platform

Conclusion

Results demonstrate that Solupore® and G-rex® can be integrated into next-generation cell therapy manufacturing processes to achieve unparalleled cell health.

