



### Supplementary fig S1

Minimal mispairing with the exogenous TCR  $\beta$  chain was shown using Mock- and WT TCR-transduced T-cells from an NPC patient, where the percentage of cells that were engineered to express V $\beta$ 4.1 was similar to the percentage expressing the SSC-specific TCR. Data shown are gated on live CD3<sup>+</sup> cells and are representative of that found with 3 patients using all three forms of the TCR (WT-TCR, coTCR and coTCRcys)

Staining for the SSC-specific TCR, CD3 and CD8 was conducted using a HLA-A\*1101/SSC pentamer, anti-CD3-FITC and anti-CD8-AmCyan (Pharmingen) as described in the methods section. Staining for V $\beta$ 4.1 was conducted on ice for 30 minutes with saturating concentrations of a PE-conjugated antibody (Immunotech). Dead cells were excluded using a viability dye (Life Technologies) according to the manufacturer's instructions.