



**Figure 1–figure supplement 1, Evolution of peptide-A $\beta$  yeast display.** **(A)** Cartoon representation and protein sequence used for the peptide-A $\beta$  yeast display. **(B)** TCR tetramer staining of the naïve library and the four consecutive rounds of yeast selection using the YAc TCR. The peptide-A $\beta$  library was generated following the random mutagenesis by error-prone PCR of the construct shown in **(A)**. **(C)** Size exclusion chromatography of the vTreg53 TCR following purification by Ni-NTA column and overnight biotinylation using BirA enzyme. **(D)** Reducing and non-reducing SDS-PAGE of the vTreg53 TCR fractions collected in **(C)**.