Tumour necrosis factor receptors (TNFRs) are a family of receptors involved in transmitting survival and death signals in lymphocytes and play a critical role in determining the outcome of an immune response and the maintenance of memory T cells. The role of TRAF1, an adaptor protein involved in linking TNFR family members to downstream signalling pathways, in the survival of CD8 memory T cells and the dependence of the 4-1BB receptor, a member of the TNFR family, on TRAF1 in mediating survival of CD8 T cells will be discussed. Using a systems biology approach novel TRAF1 binding partners have been identified to understand TRAF1-dependent-signalling pathways downstream of TNFRs in CD8 T cells.