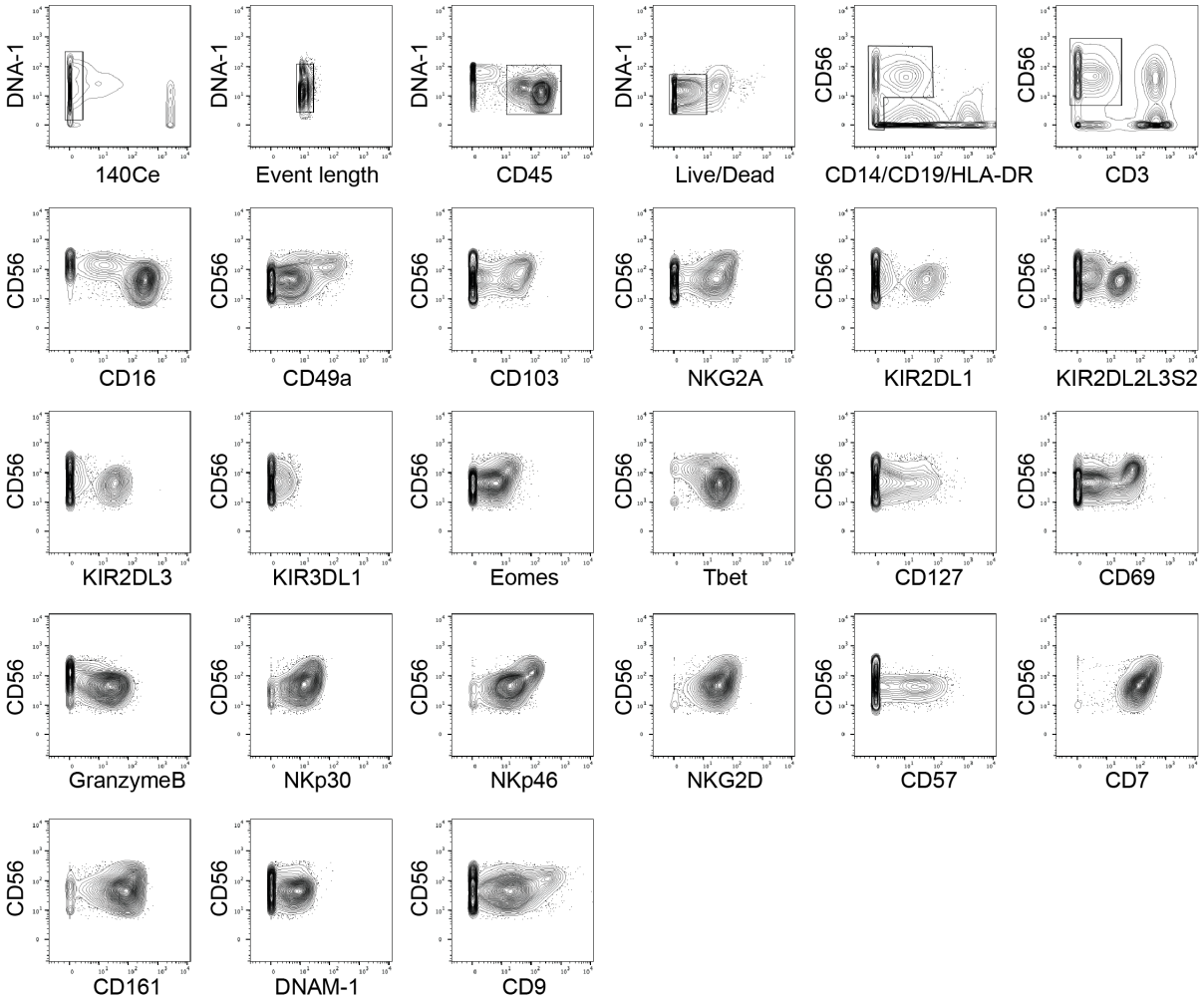
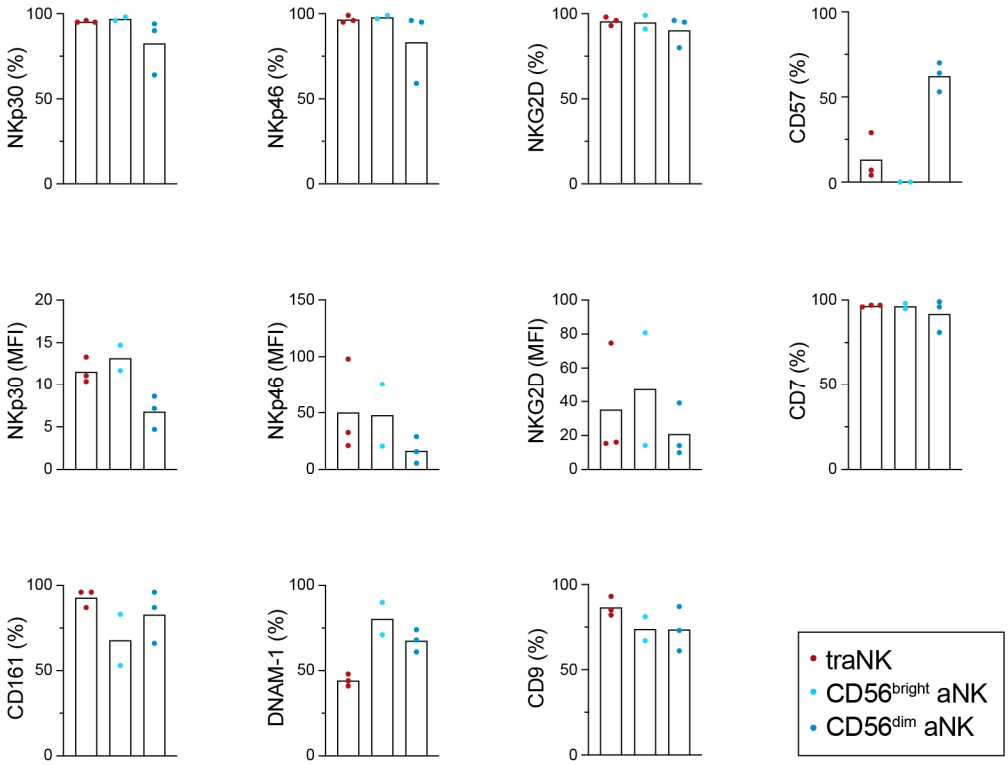
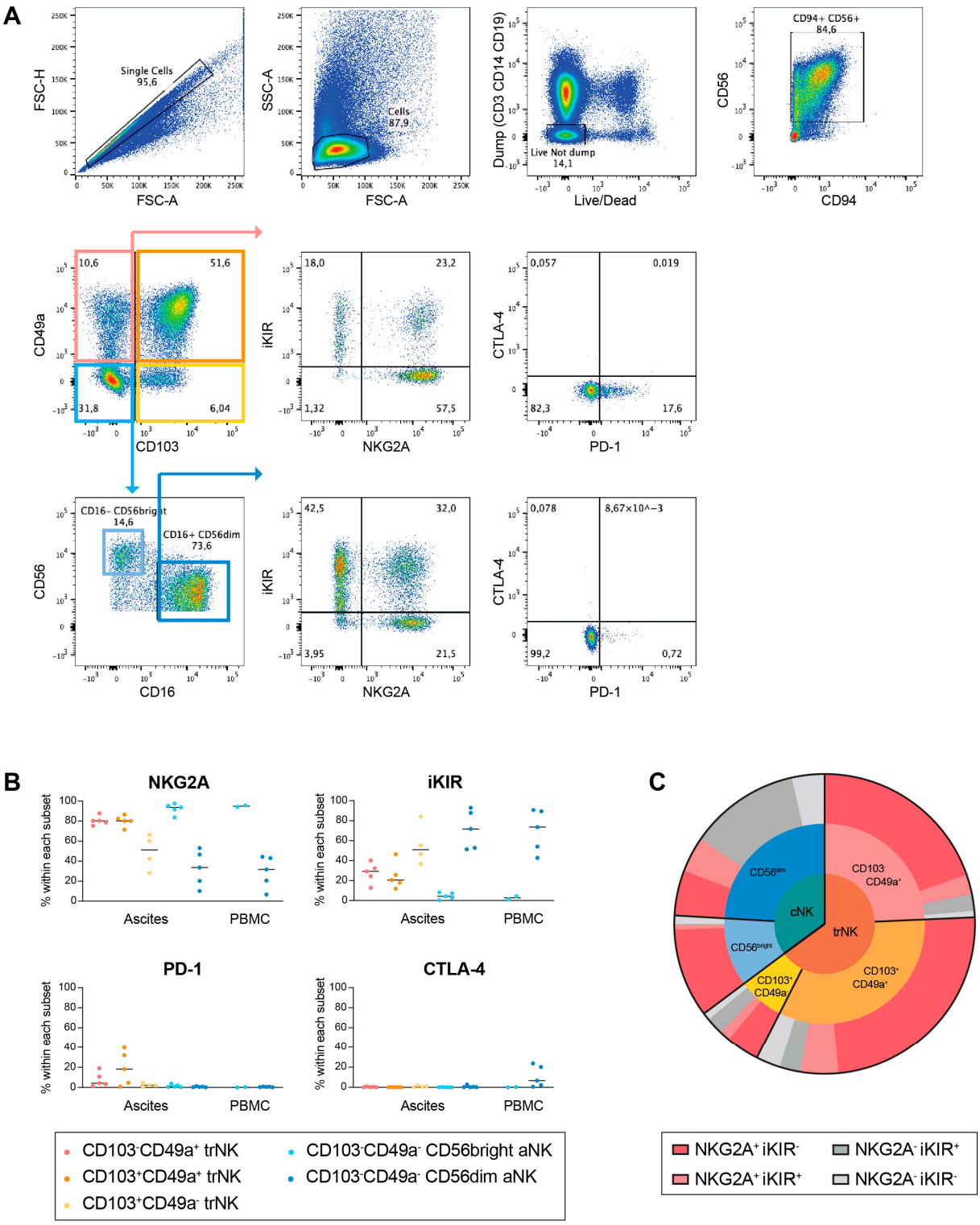


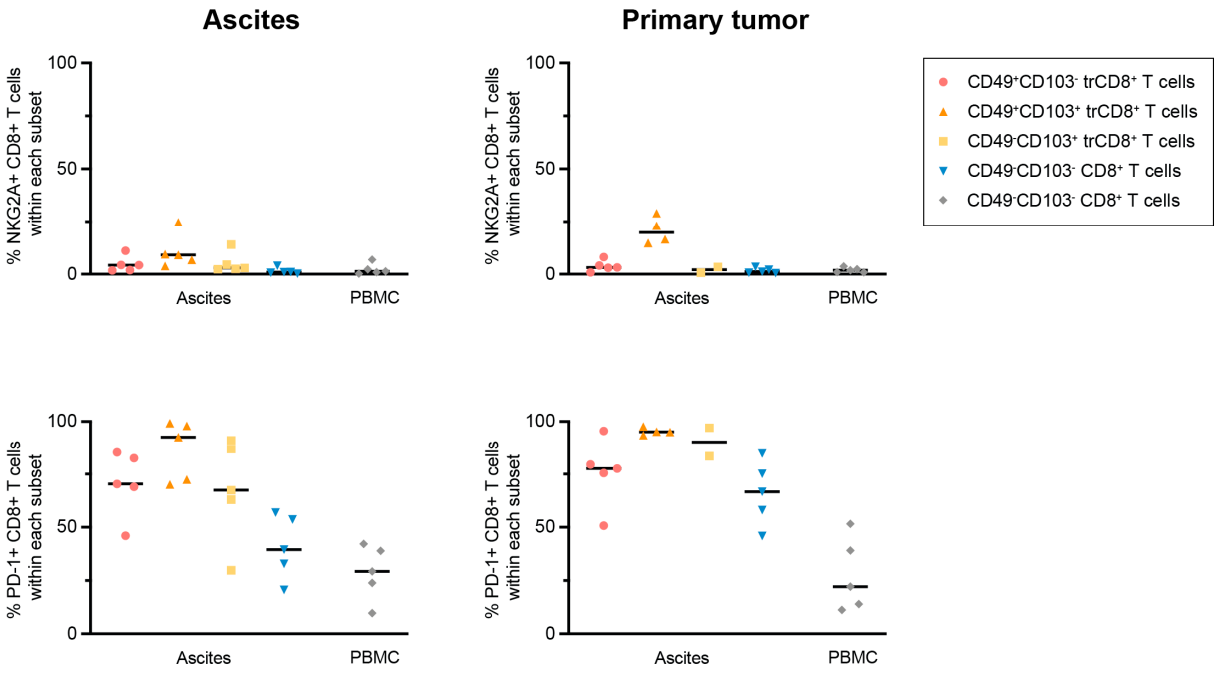
Supplementary Figure S1. Gating strategy to identify aNK cells. Representative gating strategy from one HGSC ascites samples are NK cells were defined as beads excluded, single cells, $CD45^{+}$, Live, $CD14^{-}CD19^{-}HLA\text{-}DR^{-}$, $CD3^{-}CD56^{+}$. Cells are further divided into tissue-resident cells based on their expression of CD49a and CD103, or $CD56^{bright}$ and $CD56^{dim}$ pb-like cells, and their expression of specified phenotypic markers evaluated.



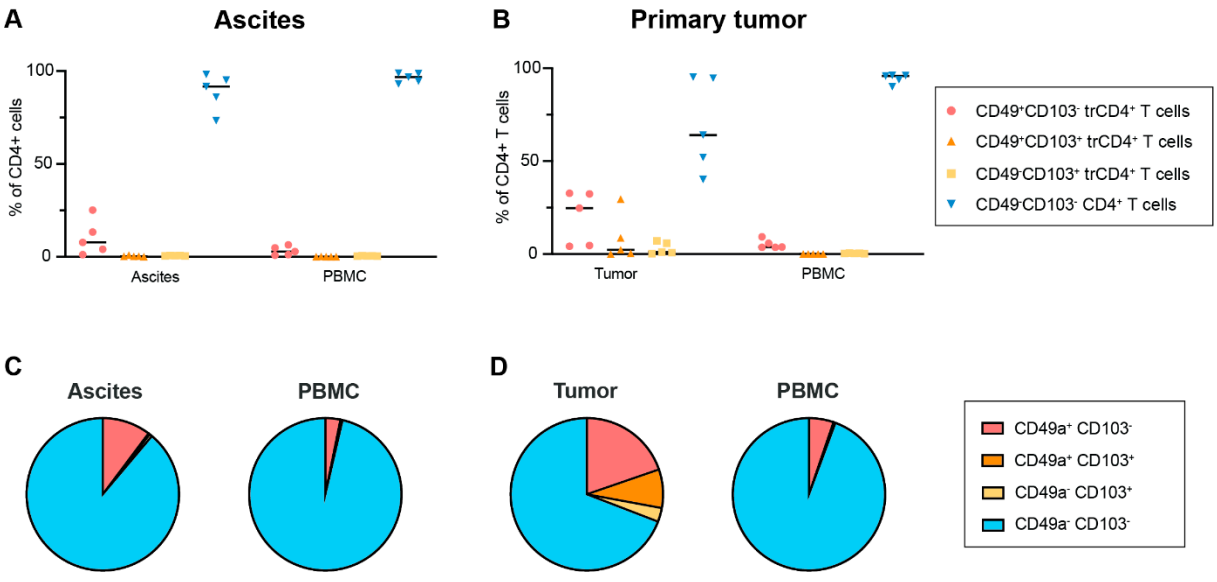
Supplementary Figure S2. Phenotypic markers on aNK cells. Expression of phenotypic markers as specified on tissue-resident (traNK) and CD56^{bright} and CD56^{dim} aNK cells within the OC ascites compartment. n=3.



Supplementary Figure S3. A) Gating strategy of one representative sample, gating for tissue-resident $CD49^+CD103^-$/$CD49^+CD103^+$/$CD49^-CD103^+$ or $CD49a^-CD103^-$ $CD56^{bright}$ and $CD56^{dim}$ NK cells from ascites of a patient with HGSC. B) Expression of inhibitory receptors as noted within each subpopulation of ascites NK cells and patient-matched PBMCs. C) NK subset distribution among ascites NK cells. Mean frequency of n=5 samples.



Supplementary Figure S4. **Expression of inhibitory receptors in HGSC-associated CD8⁺ T cells**. Frequency of NKG2A and PD-1 expression on tissue-resident and CD8⁺ T cell subsets in ascites and primary tumor, with patient-matched PBMC for each site. n=5 (ascites), n=5 (primary tumor).



Supplementary Figure S5. **Presence of tissue-resident CD4⁺ T cells in HGSC.** A,B) Distribution of tissue-resident (tr) and pb-like CD4⁺ T cells in ascites (A) and primary tumor (B), with patient-matched PBMC for each site. C,D) Mean distribution of data in A and B. n=5 (ascites), n=5 (primary tumor).