Figure S1. Gating strategy for identification and phenotypic analysis of antigen-specific $CD8^+$ T cells. B cells and monocytes were excluded prior to analysis. $CD8^+$ T cells were identified from the total lymphocytes based on CD3 and CD8 expression (top left). Antigen-specific $CD8^+$ T cells were detected using peptide-MHC dextramers (e.g., $PSA_{153-161}$), shown in the top right panel, with colored dots representing peptide-binding cells. The phenotypic characterization was performed using CCR7 vs CD28 (bottom left) and CCR7 vs CD45RA (bottom right) plots. $CD8^+$ T cell subsets were defined as: naïve ($CD45RA^+$ $CCR7^+$ $CD28^+$), central memory (CM; $CD45RA^-$ $CCR7^+$ $CD28^+$), effector memory (EM; $CD45RA^-$ $CCR7^-$ $CD28^+$), and terminal effector memory (TEMRA; $CD45RA^+$ $CCR7^-$ $CD28^-$). These subsets were assessed both within the total $CD8^+$ T cell population and among antigen-specific cells. This strategy enables the comprehensive profiling of T-cell differentiation and antigen specificity. MHC, major histocompatibility complex; PSA, prostate-specific antigen; CCR7, C-C chemokine receptor type 7.