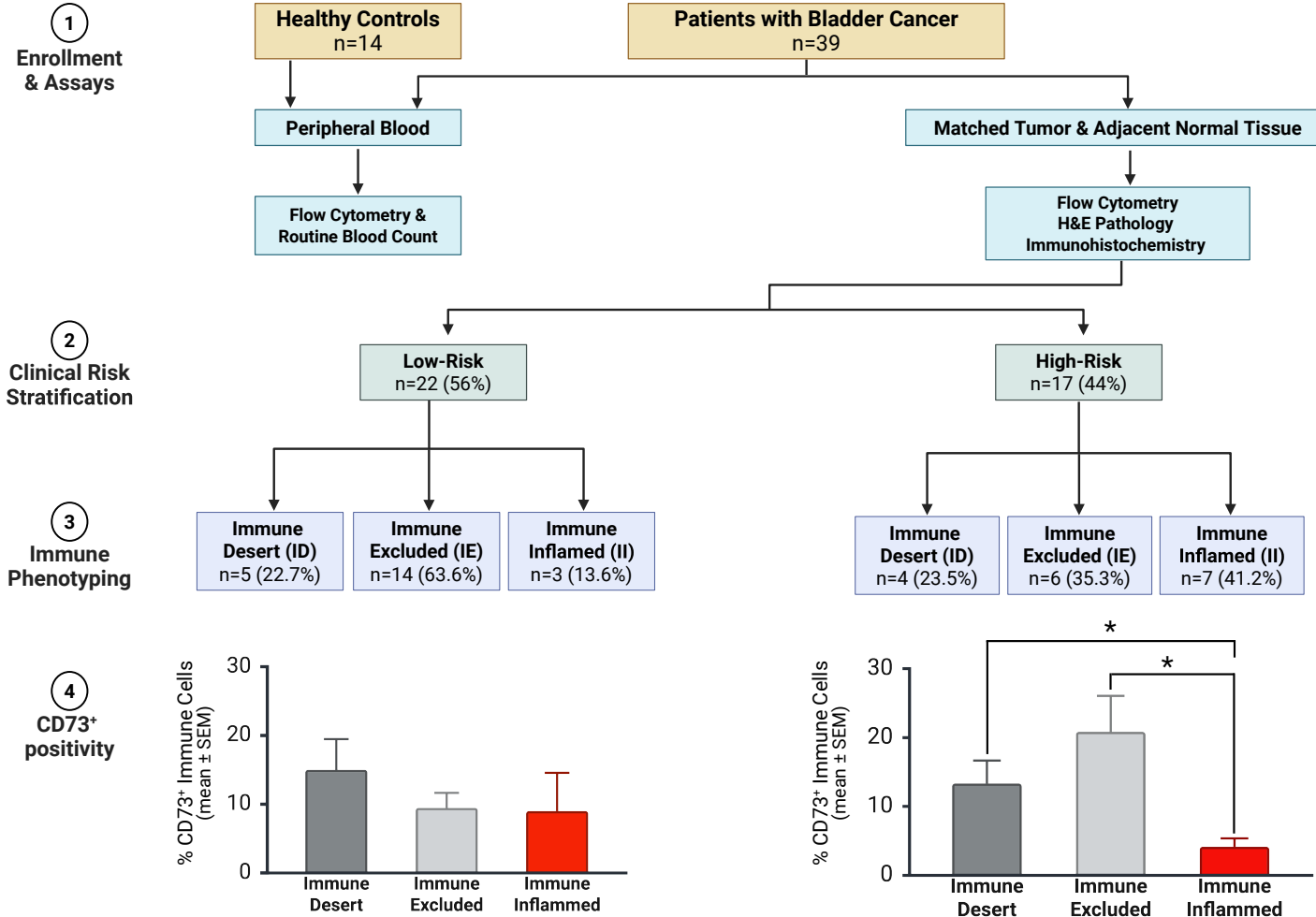




Supplementary Figure 5 Study workflow and clinical-spatial stratification. (1) Patient enrollment (n=39 bladder cancer [BCa], n=14 healthy controls) and matched sample collection for flow cytometry and immunohistochemistry. (2) Stratification into Low-Risk (LR) and High-Risk (HR) groups. (3) Spatial immune phenotyping of the tumor microenvironment into Immune Desert (ID), Immune Excluded (IE), and Immune Inflamed (II) subgroups. (4) Quantification of CD73⁺ immune cells across spatial phenotypes, demonstrating a significant reduction in II tumors, fundamentally driven by HR cases. * $p < 0.05$, when comparing the groups indicated in the figure. Statistical significance was determined using the Mann-Whitney U test. SEM, standard error of the mean