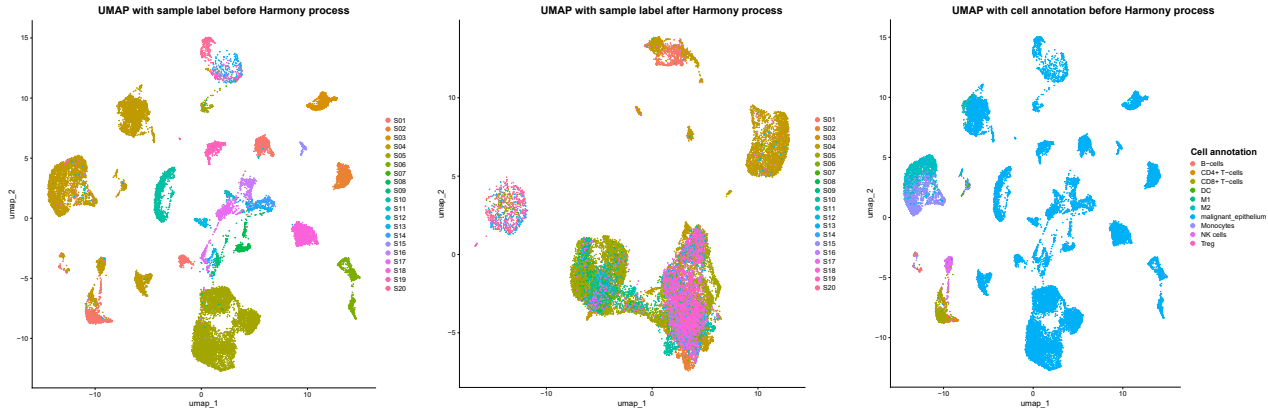




Supplementary Figure 1. Harmony integration reduces inter-sample batch effects.

On the left, the pre-Harmony UMAP colored by sample ID shows clustering by sample of origin, indicating inter-sample technical effects. In the middle, the post-Harmony UMAP colored by sample ID shows improved mixing of cells from different samples within shared clusters, consistent with reduced batch effects. On the right, the pre-Harmony UMAP colored by cell type demonstrates clear lineage organization that is maintained after Harmony process (see Figure 4A for the post-Harmony UMAP colored by cell type).