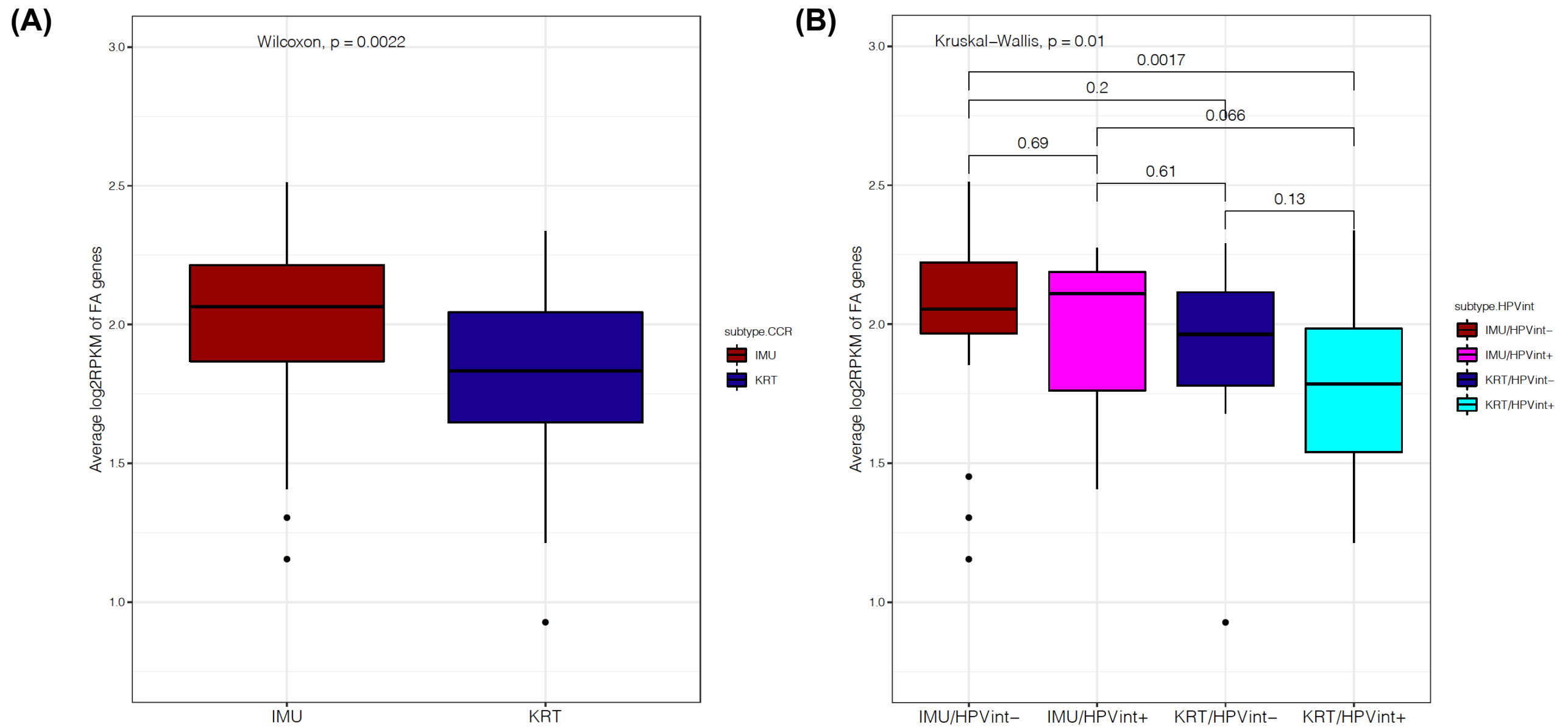


**Supplementary Figure 1** Comparisons of pathway scores of T cell differentiation (Tcell.score), CD8 T cell (CD8.Tcell), Dendrite cell marker for head neck cancer (Dentrite.marker.HNSCC) and Immune Marker for Head Neck Cancer (Immune.marker.HNSCC) among the 84 HPV(+) HNSCC samples from combined TCGA and UM cohorts, which were stratified by IMU/KRT subtypes and HPV integration status.



**Supplementary Figure 2** Comparisons of average fanconi anemia (FA) genes among the 84 HPV(+) HNSCC samples from combined TCGA and UM cohorts between (A) IMU/KRT subtypes and (B) IMU/KRT subtypes and HPV integration status.