Supplementary Figure 1. The CUL2-associated disease network.
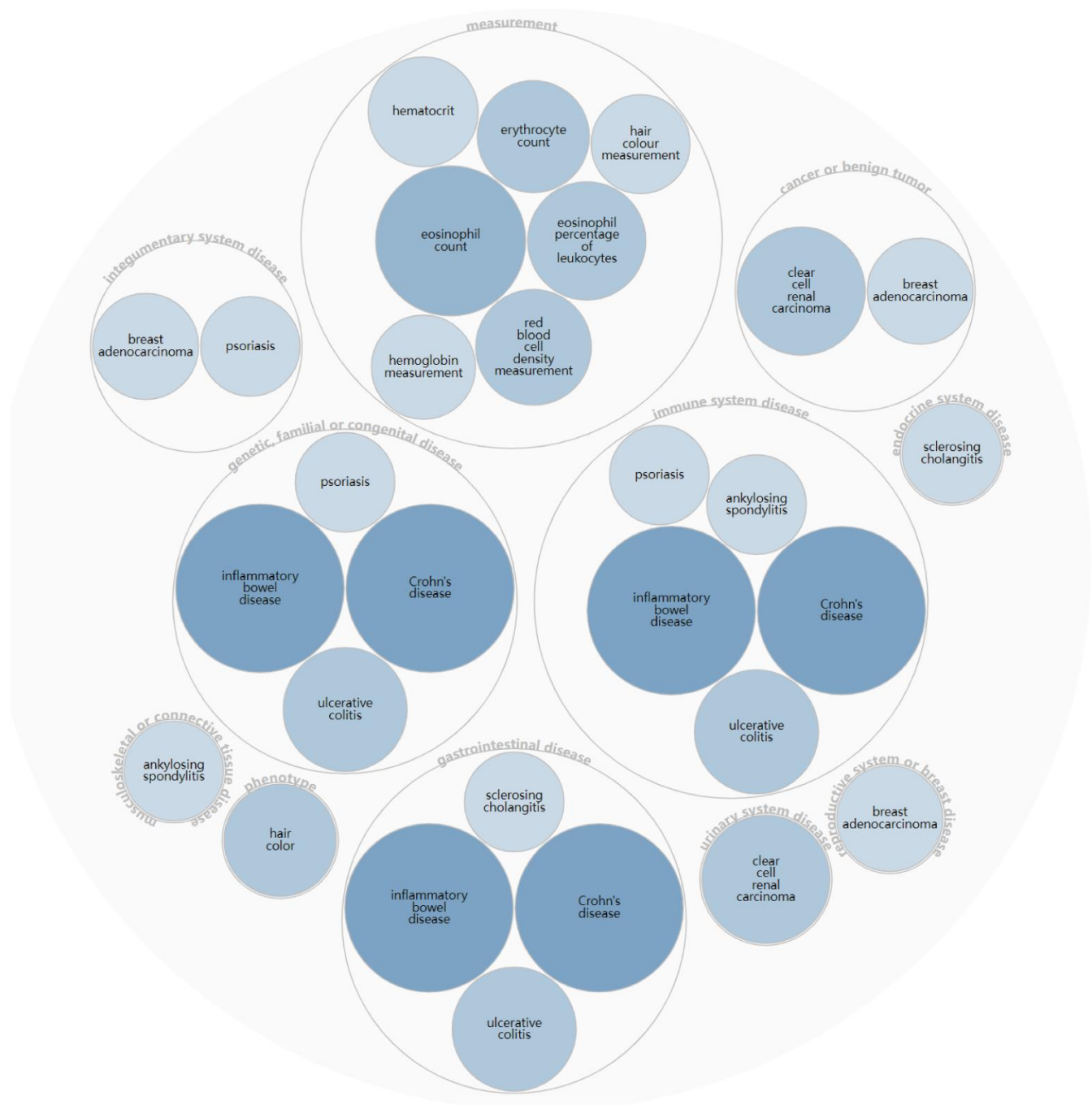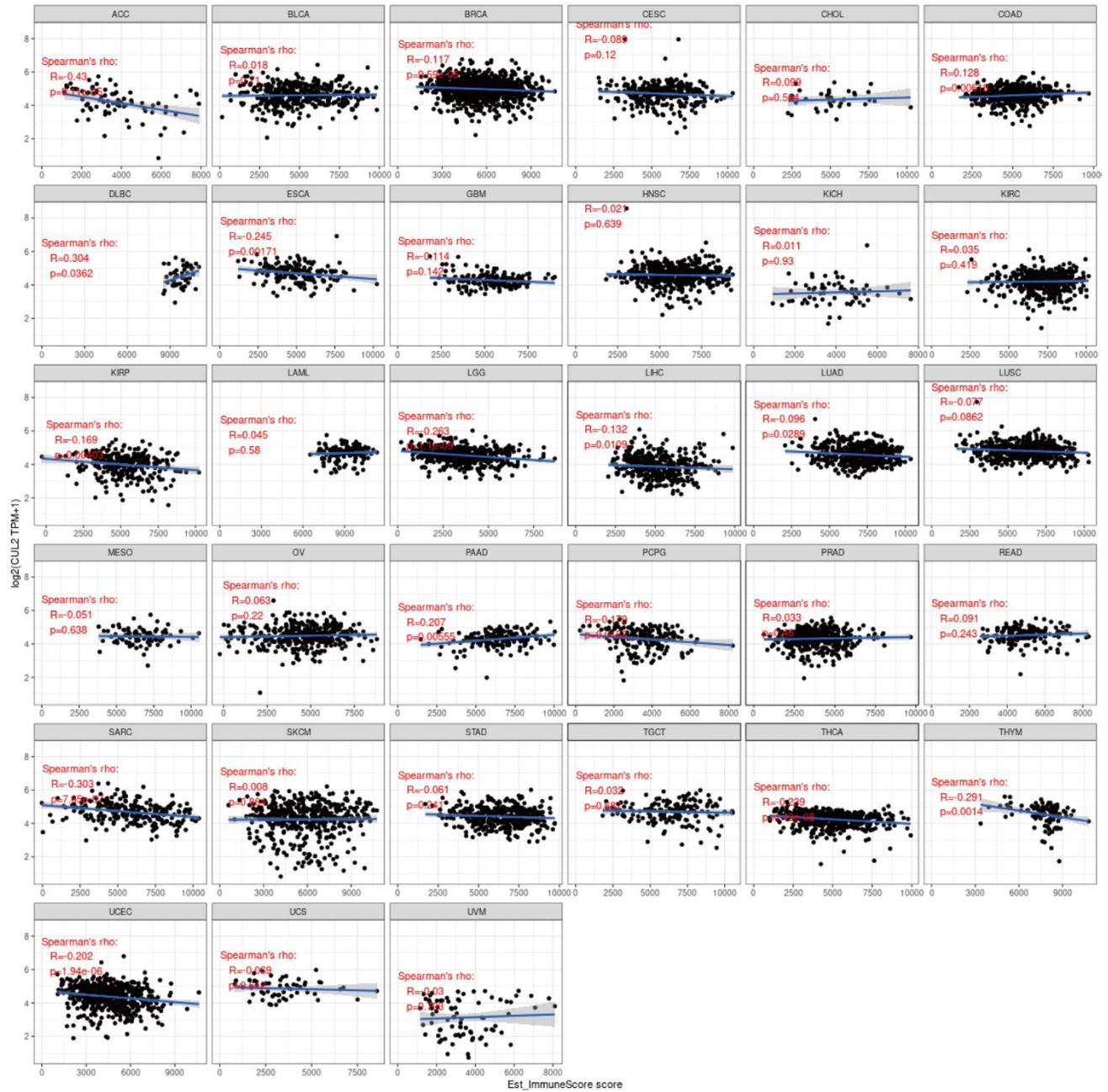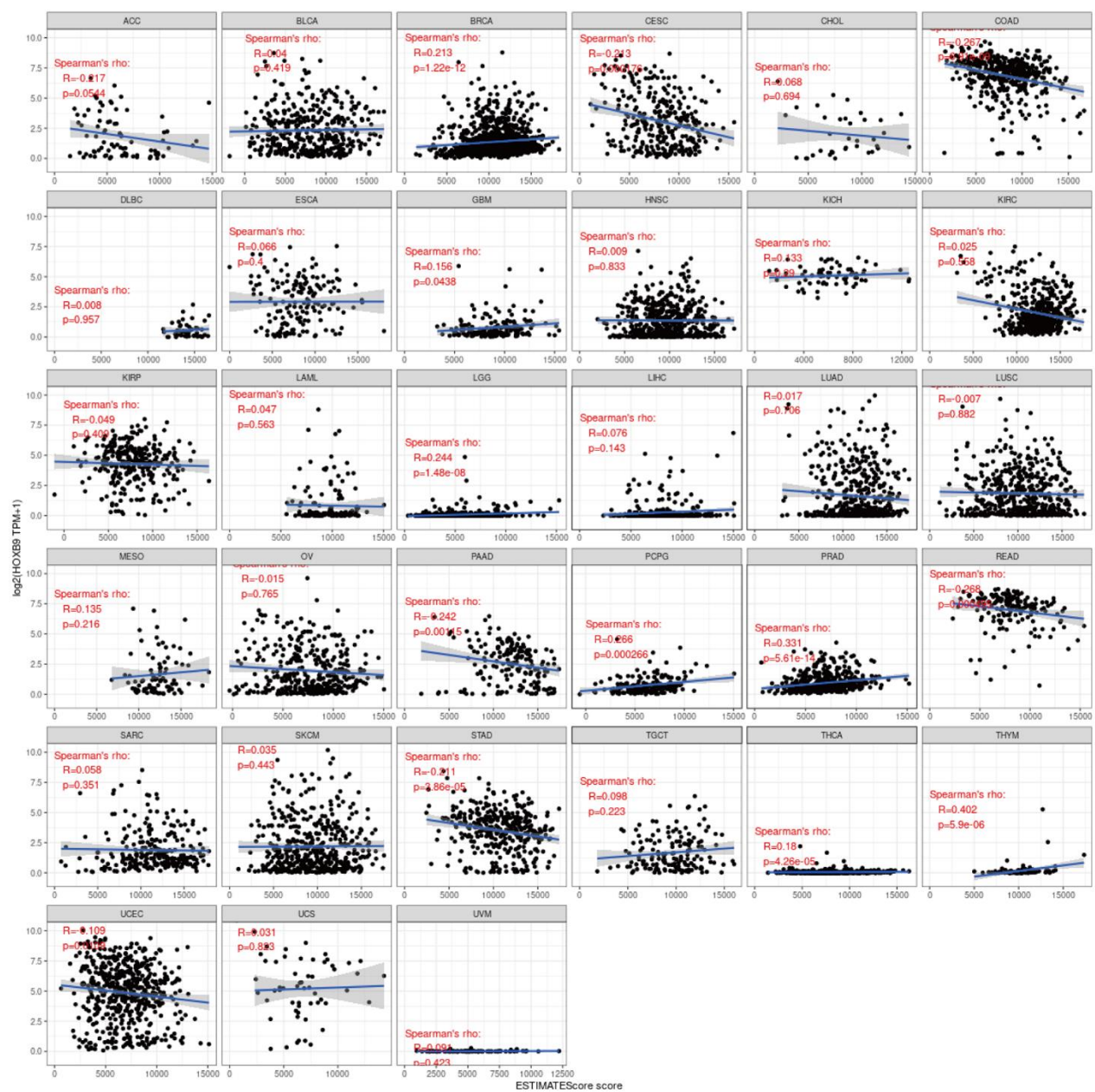
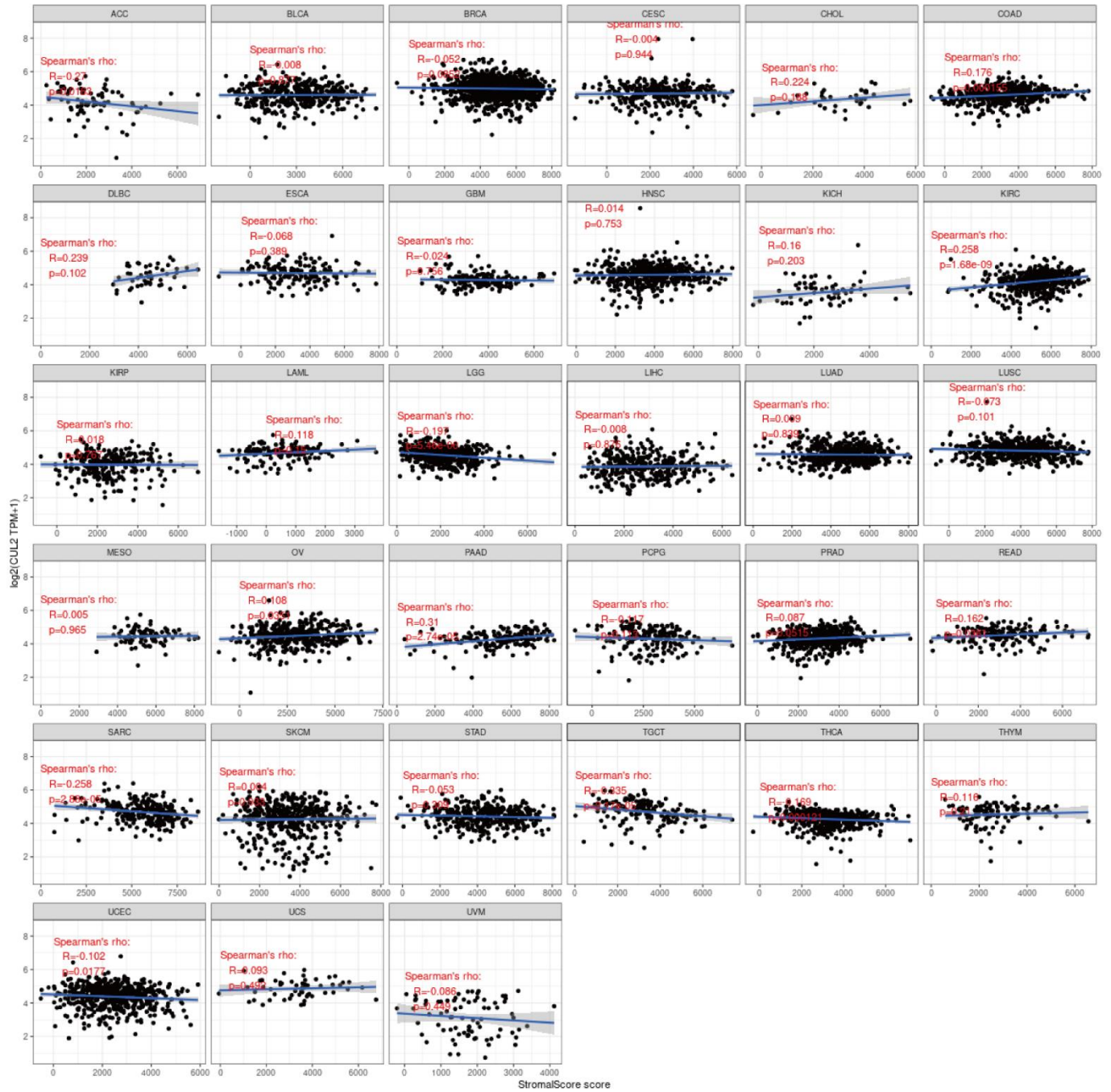**Relationship between CUL2 expression and the immunescores.**

Supplementary Figure 2. Correlation analysis between expression levels of CUL2 and ImmuneScore in pan-cancer.

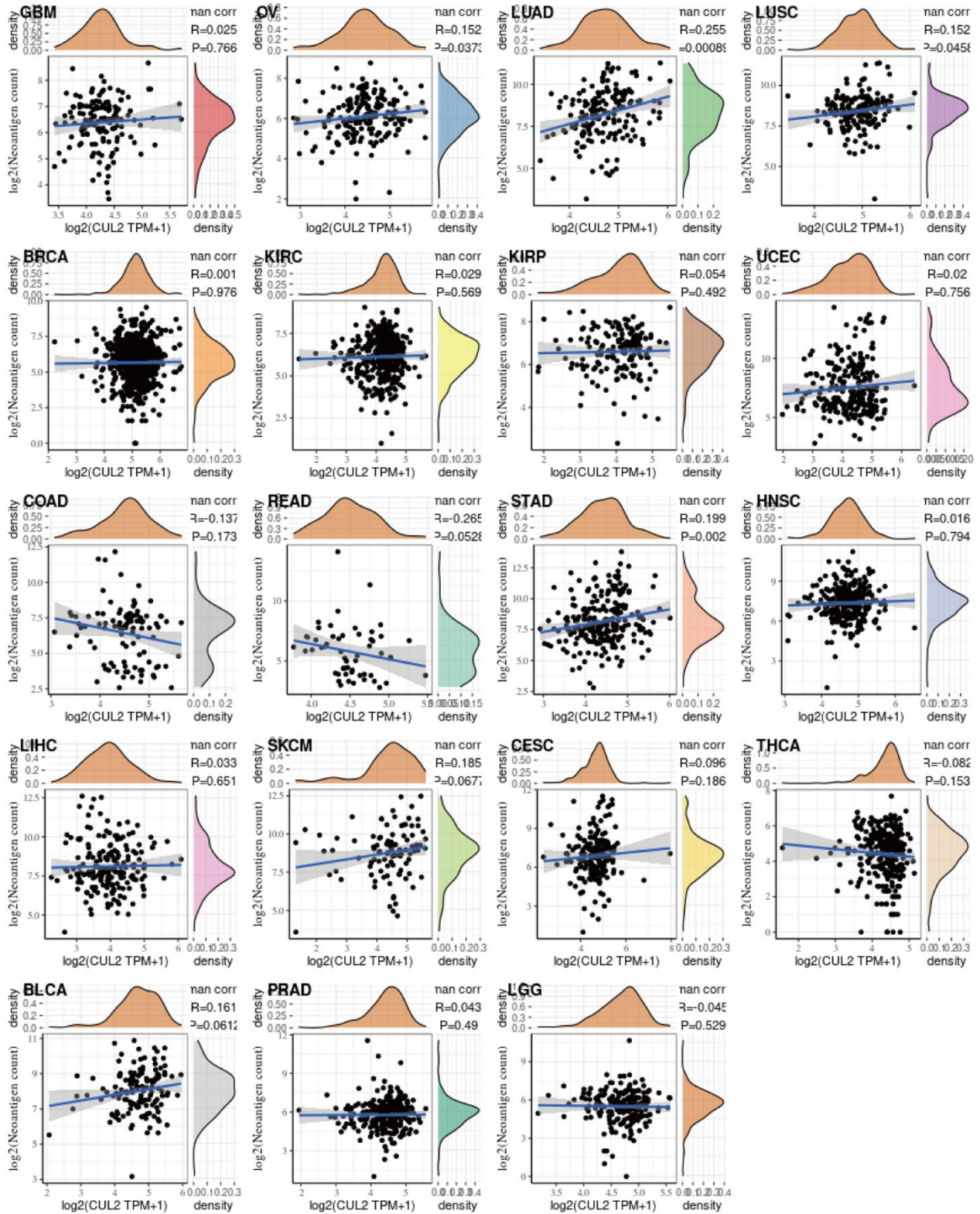# Relationship between HOXB9 expression and the estimatescores.

Supplementary Figure 3. Correlation analysis between expression levels of CUL2 and EstimateScore in pan-cancer.

Relationship between CUL2 expression and the stromalscores

Supplementary Figure 4. Correlation analysis between expression levels of CUL2 and StromalScore in pan-cancer.

Relationship between CUL2 levels and neoantigens in pan-cancer

Supplementary Figure 5. Correlation analysis between CUL2 expression in pan-cancer and the number of tumors neoantigens in pan-cancer.