

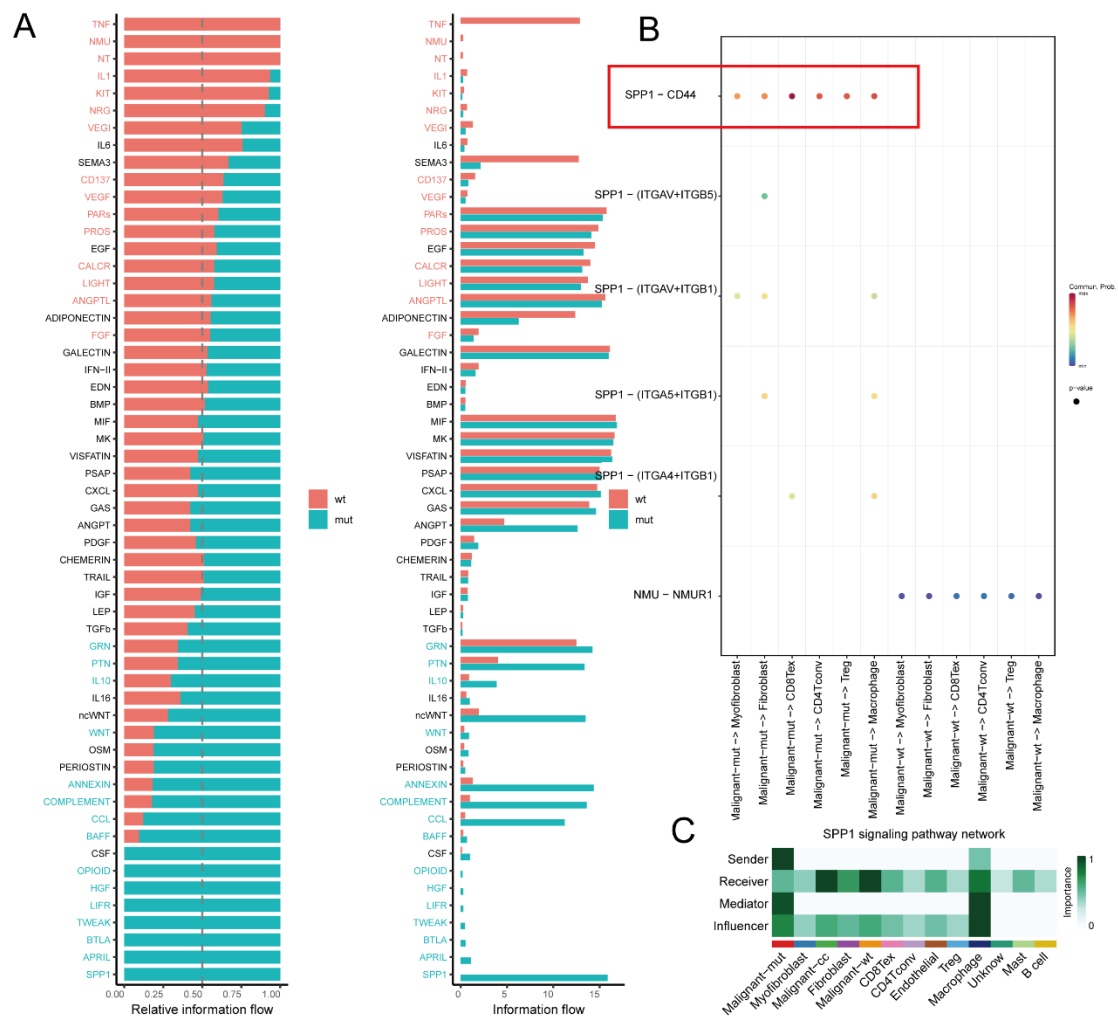


Figure S1. The Cell-Cell Communication Between Wt and Mut Groups.

(A) Comparison of cell-cell communication networks, highlighting active **LIFR**, **TWEAK**, **CCL**, **BTLA**, **APRIL**, and **SPP1** pathways in the mutant group, versus active **TNF**, **NMU**, and **IL1** pathways in the wild-type group.

(B-C) The SPP1 signaling pathway identifying ligand-receptor interactions among various cell types.