

Supplemental Table S1: Markers for manual cell annotation

Cell type	Canonical/Legacy Markers
Basal	KRT5+,TP63+, KRT15
Cycling basal	KRT5+ ,MKI67+, TP63
Suprabasal	KRT5 ^{mid} , KRT17 ^{low} ,TP63 ^{low} , MUC5AC ^{mid} , MUC5B ^{mid}
Club	SCGB1A1+ SCGB1A2+ MUC5B+
Goblet	MUC5AC+
Deuterosomal	DEUP1+ - FOXJ1+
Multiciliated	DEUP1- - FOXJ1+
Ciliated cell	FOXJ1, PIFO, TPPP3, SNTN, FAM183A, LRR1Q1, DNAH12, C20orf85, , CAPS,

	TUBB4B, DNAH5, TSPAN1
Mucous-ciliated cells	FOXJ1, MUC5AC
Ionocyte	FOXI1, CFTR, ASCL3, RARRES2
Monocyte derived macrophage	CD16, CD14, CD68, CD163, MRC1
Neutrophil	FCGR3B, CSF3R, NAMPT, HCAR2, PI3