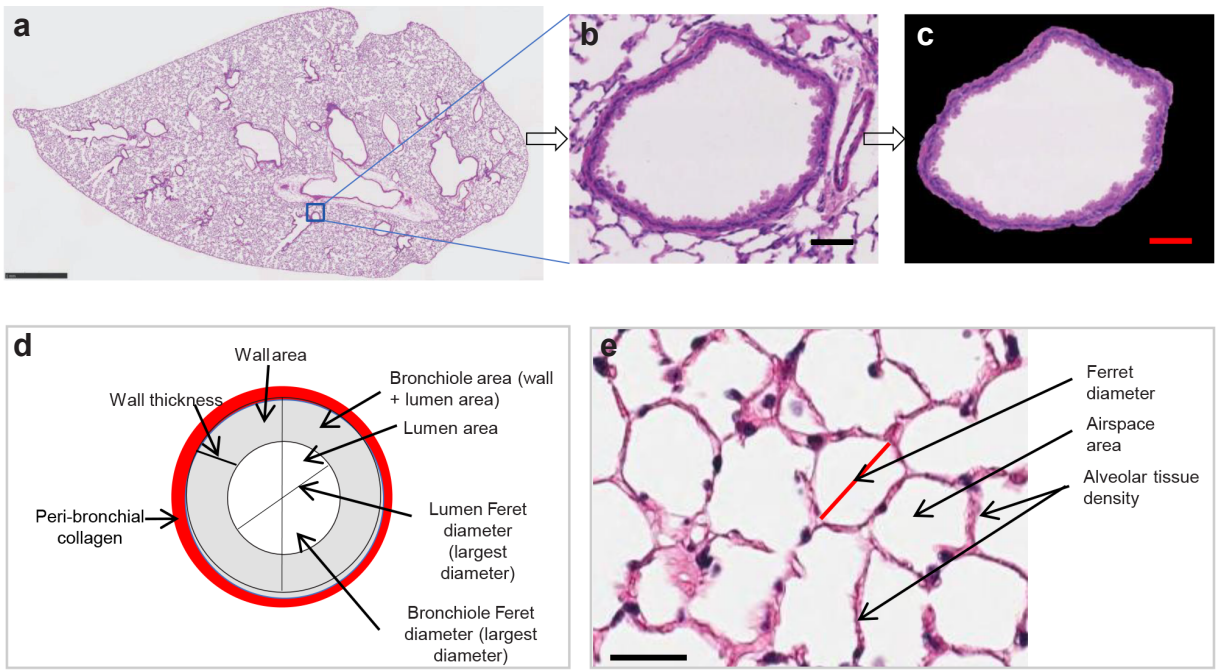


## **Supplementary information**

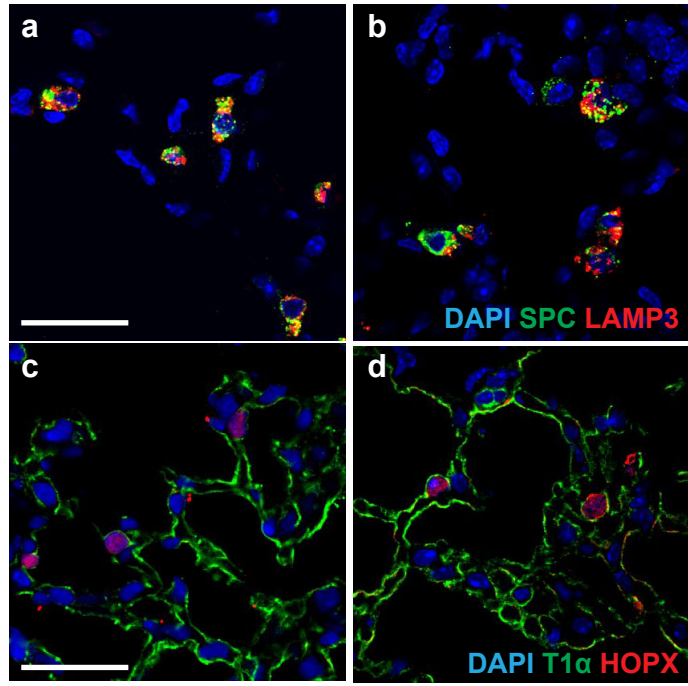
Distal lung epithelial progenitor cell function declines with age

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# Supplementary Figure 1

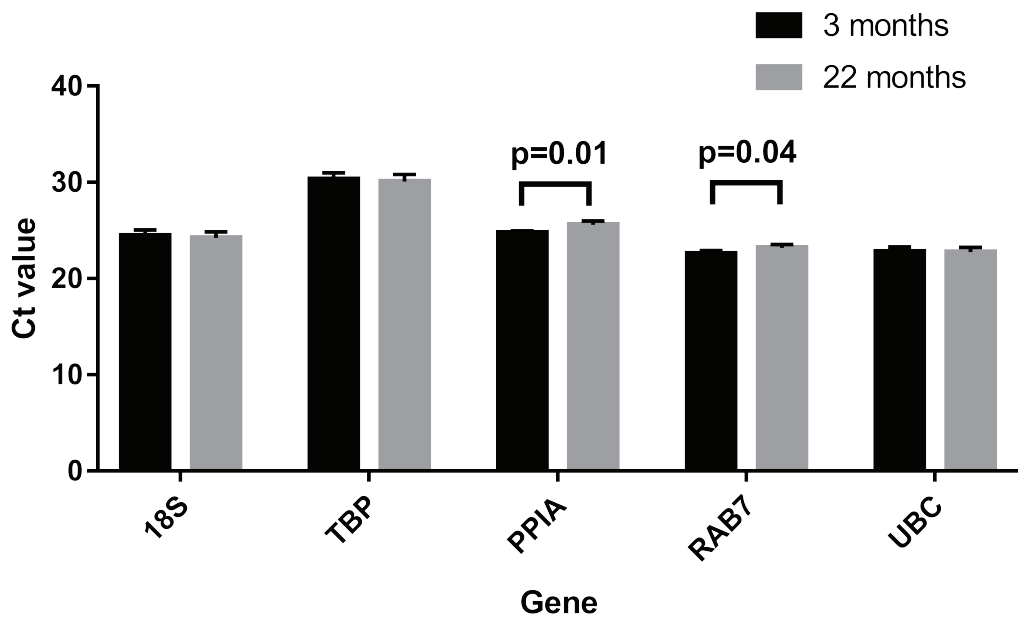


Supplementary Figure 2



### Supplementary Figure 3

a



b

		Gene to which expression is normalised				
		18S	PPIA	RAB7	TBP	UBC
Fold change (p-value)	18S		1.8 (0.04)*	1.2 (0.67)	0.8 (0.59)	1.0 (0.91)
	PPIA	0.4 (0.02)*		1.2 (0.01)*	0.4 (0.15)	0.5 (0.02)*
	RAB7	0.4 (0.06)	1.1 (0.24)		0.5 (0.25)	0.6 (0.05)*
	TBP	0.8 (0.54)	1.9 (0.03)*	0.6 (0.30)		1.2 (0.59)
	UBC	0.8 (0.41)	1.6 (0.05)*	1.0 (0.91)	0.9 (0.73)	

### **Supplementary Figure Legends**

**Supplementary Figure 1. Schematic depicting the automatic analysis of bronchioles and airspaces from an entire lung section.** a. Bronchioles are first selected according to their Feret diameter (largest diameter) ranging between 100 and 500  $\mu\text{m}$ . b, c. Bronchiolar epithelium is then automatically discriminated by removing the attached alveolar tissue. d. Morphological parameters are assessed including: bronchiolar, lumen and wall area, the bronchiolar and lumen Feret diameter and the wall thickness. e. Representative image of airspace morphometric parameters assessed for alveolar tissue analysis. Scale bars are 1 mm (a), 50  $\mu\text{m}$  (b, c), 30  $\mu\text{m}$  (e).

**Supplementary Figure 2. Validation of markers of Type II and Type I cells.** 63x images of lung alveoli from a. 3 month old and b. 22 month old mice, stained for DAPI (blue), SPC (green), LAMP3 (red), and from c. 3 month old and d. 22 month old mice, stained for DAPI (blue), T1 $\alpha$  (green) Hopx (red). Scale bars are 15 $\mu\text{m}$ .

**Supplementary Figure 3. Expression of housekeeping genes.** a. Raw Ct values for each housekeeping gene. Error bars are 95% confidence intervals. n=6 mice per age group. b. Table demonstrating the fold change of each housekeeping gene, with respect to the other housekeeping genes, and the accompanying two-tailed T-test p-value. P-values < 0.05 are marked by an asterisk.