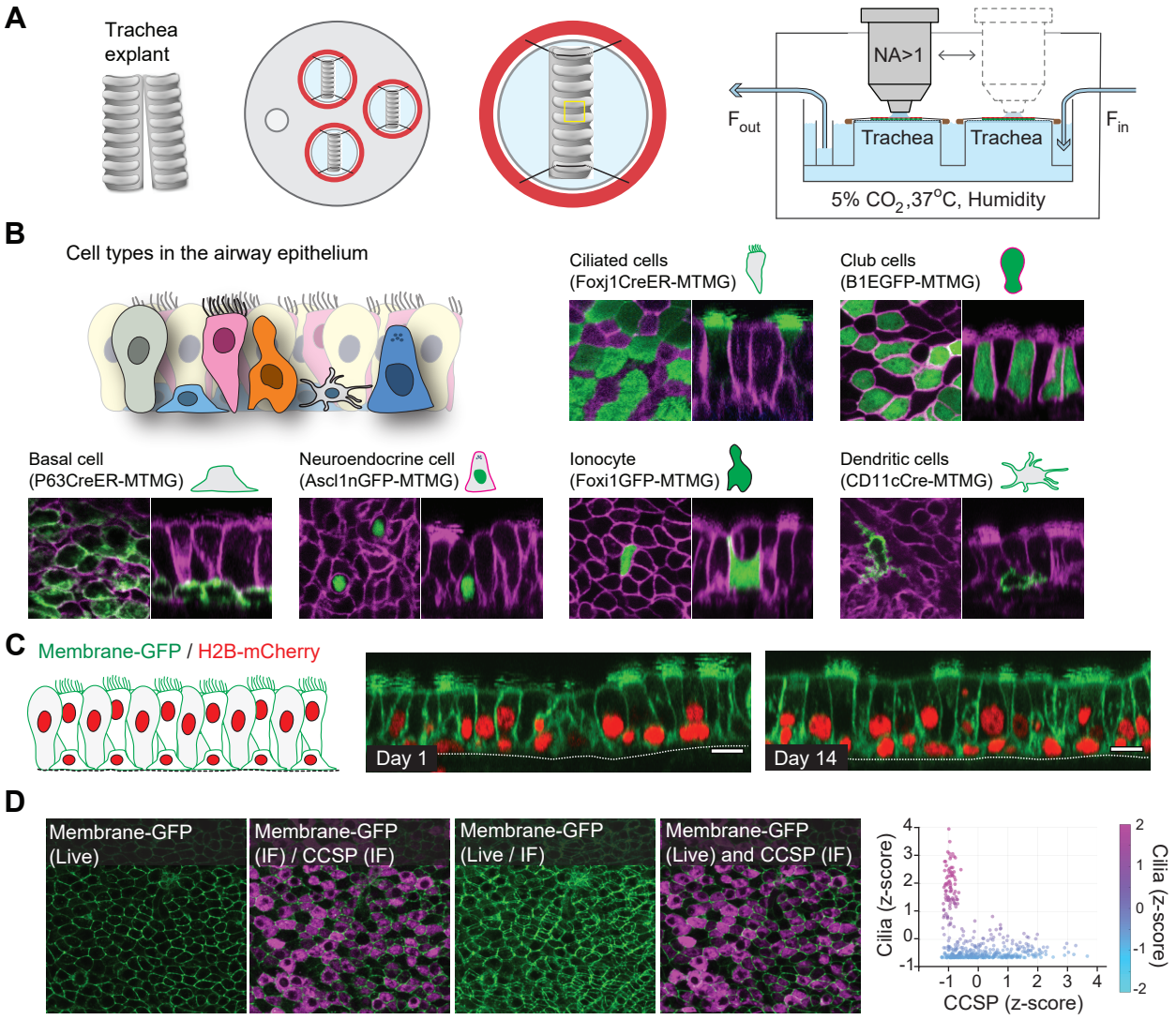

Figure 1 – figure supplement 1. Platform for live imaging of airway tissue. (A) Detailed schematic of ALI platform for airway tissue imaging. The platform enables imaging of multiple tissue explants at a time in a controlled environment maintaining ALI, temperature, humidity, and CO2 content. (B) Representative images of airway epithelial cells using different transgenic mouse models including fluorescent reporters for ciliated, club, basal, neuroendocrine, ionocyte, and dendritic cells. Green = cell type-specific GFP reporter; magenta = membrane-tdTomato. Scale bar = 10 μm. (C) Representative two-photon images of the same airway tissue explanted from a membrane-GFP/H2B-mCherry transgenic mouse at day 1 and day 14 in ALI culture. Scale bar = 10 μm. (D) Registration of live imaging with post-fixation-staining imaging using in silico tissue flattening followed by non-rigid 3D registration. Ciliated cells identified by live imaging were found to have low CCSP expression, while cells with high CCSP expression tended to have no cilia.