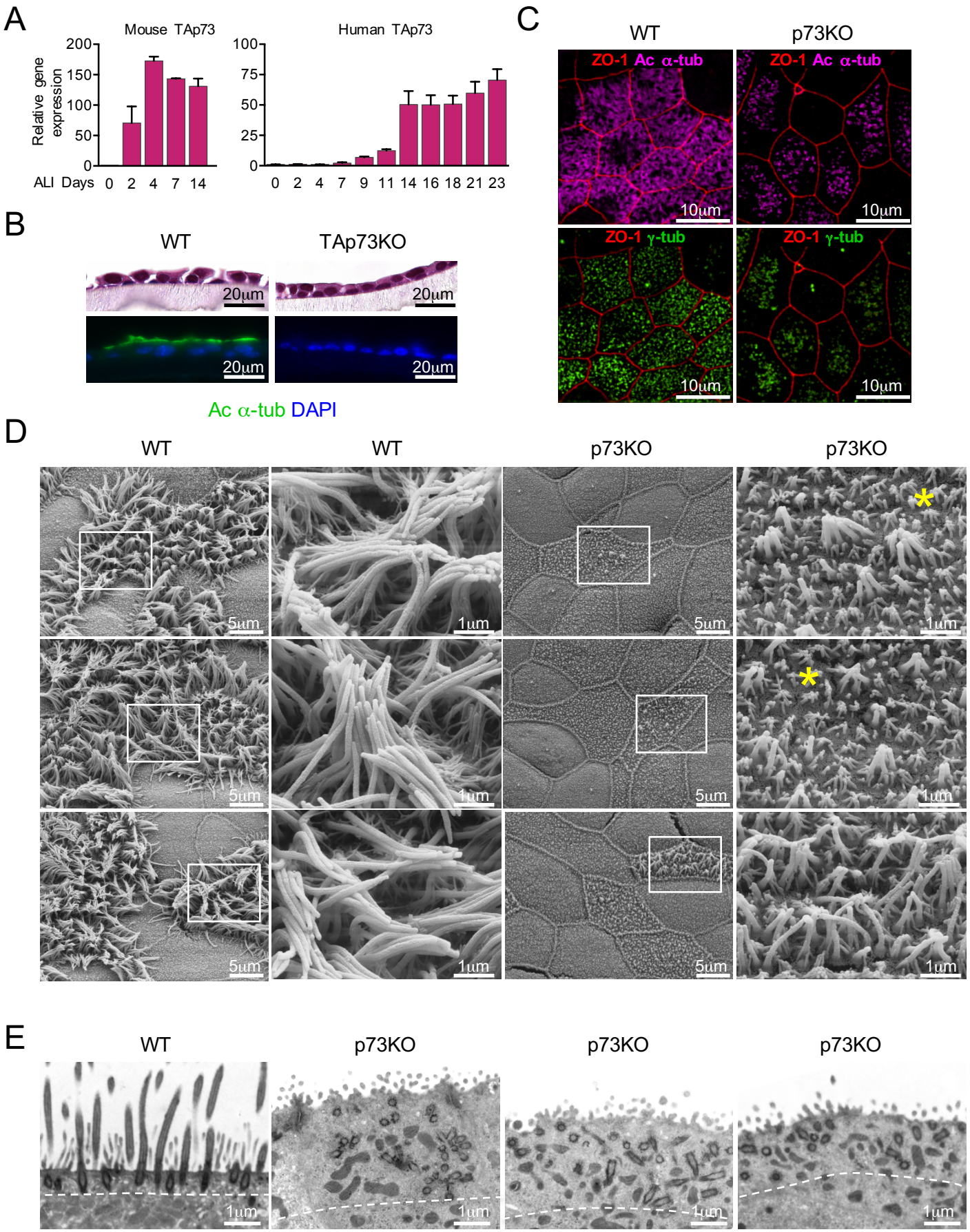
A
Mouse TAp73
Human TAp73
Relative gene expression
ALI Days 0 2 4 7 14
0 2 4 7 9 11 14 16 18 21 23
B
WT
TAp73KO
20μm
Ac α-tub DAPI
C
WT
p73KO
ZO-1 Ac α-tub
ZO-1 γ-tub
10μm
D
WT
WT
p73KO
p73KO
5μm
1μm
E
WT
p73KO
p73KO
p73KO
1μm

Supplemental Figure S3 (related to Fig. 3)**. TP73 deficiency in primary organotypic airway cultures recapitulates the profound ciliogenesis defects present *in vivo***

(**A**) TAp73 expression is induced early after ciliogenesis initiation. In mouse, TAp73 is induced at ALI D2 and peaks at D4 during the 14d long differentiation of WT MTECs. Analogous human cultures from isolated primary tracheal cells induce TAp73 expression at D9 during their 23d long differentiation. qRT-PCR analysis.

(**B**) TAp73 deficiency results in loss of cilia, indicated by lack of Ac α-tub in MTEC cultures at ALI D14. Lateral projection, confocal immunofluorescence, representative images of 3 mice per genotype.

(**C**) Surface view SIM images of WT and p73KO MTECs at ALI D14, immunostained for cell borders (ZO-1, red), ciliary axonemes (Ac α-tub, magenta) and basal bodies (γ-tub, green).

(**D**) SEM micrographs of MTECs from WT and p73KO tracheae at ALI D14. In p73-deficient MCC cells the abundant, long cilia of WT cells are severely decreased in number and length in most cells. *Bottom row* A minority of KO cells (2.5%) fulfill the criteria of 'fully ciliated' MCCs (see Fig. 3D) but still do not form normal-length and numbers of cilia. In contrast, interspersed microvilli at the apical surface are preserved (*). Boxed areas are shown as magnification.

(**E**) In p73KO cells, many BBs fail to properly dock along the apical surface membrane and hence do not produce axonemal extensions. TEM images of MTECs from WT and p73KO tracheae at ALI D14.