



Supplementary information, Fig. S6: Ciliary trafficking of ARL13B with TULP3 mutants.

a, Representative cell images quantified in Fig. 4c are shown. *Tulp3* ko IMCD3 line stably expressing LAP-tagged wild type (WT) TULP3 or indicated mutant were grown to confluence, serum starved for 36 h before fixation and immunostained for ARL13B (red), GFP (green), acetylated tubulin (magenta) and counterstained for DNA. Maximum intensity Z-projections of

stacks at the plane of the cilia (red/magenta channels) or nuclei (green channel) are shown in the left panels. Arrows and arrowheads indicate cilia positive and negative for indicated proteins, respectively. Yellow arrow/arrowhead marked cilia are shown in the right insets that show maximum intensity Z-projection at the plane of the cilia. Scale, 5 μm ; insets, 1 μm . **b**, Quantification of cilium length in the presence of wild type or LAP-tagged *TULP3* variants stably expressed in *Tulp3* ko IMCD3 cells. Comparisons of the lines with respect to IMCD3 or with respect to stably expressing LAP-tagged *TULP3*^{WT} in *Tulp3* ko cells are shown. ****, $p < 0.0001$; ***, $p < 0.001$; **, $p < 0.01$; *, $p < 0.05$.; ns, not significant **c**, Western blot of wild type or LAP-tagged *TULP3* variants stably expressed in *Tulp3* ko IMCD3 cells. The amounts of LAP-tagged *TULP3* and mutants are normalized to α -tubulin. The percentage of GFP-expressing cells is also indicated. LAP, EGFP-TEV-S tag-X.