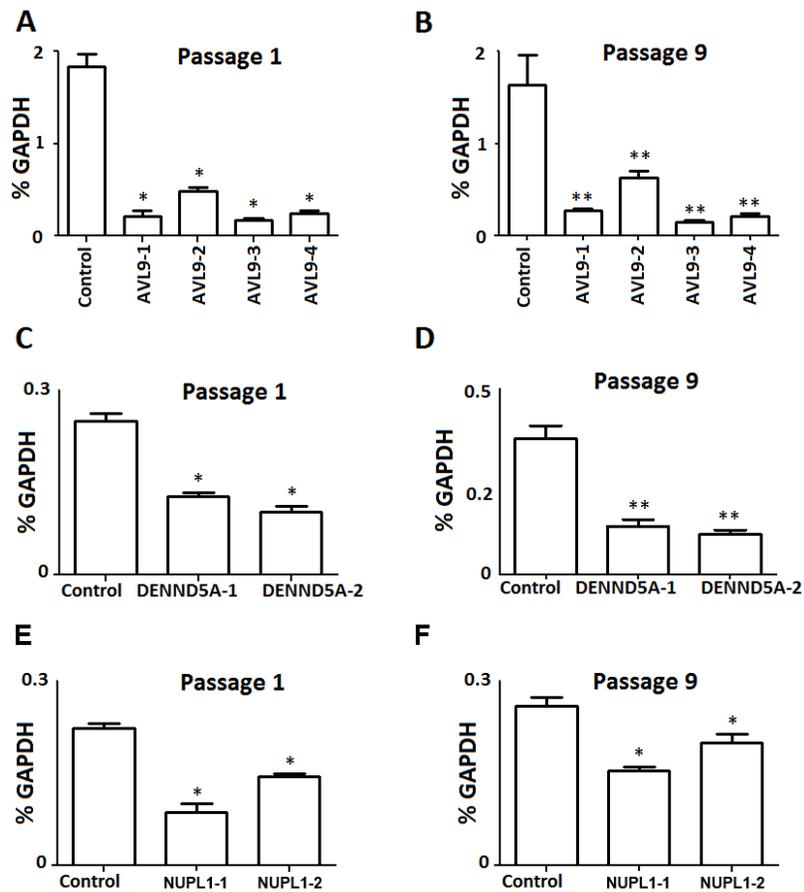


# Cancer driver candidate genes *AVL9*, *DENND5A* and *NUPL1* contribute to MDCK cystogenesis

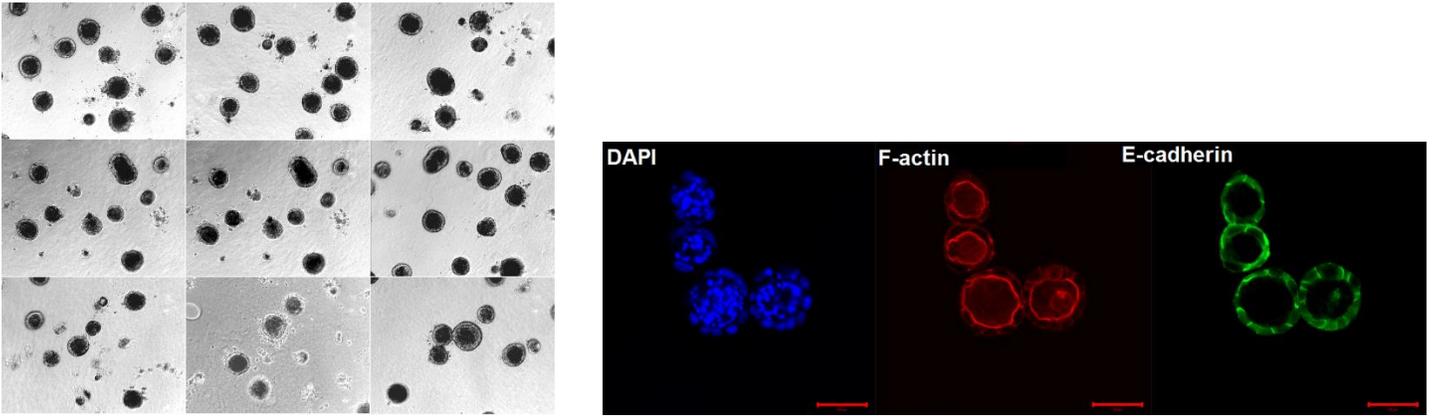
## Supplementary Materials

**Table S1: RNAi sequences used in the study**

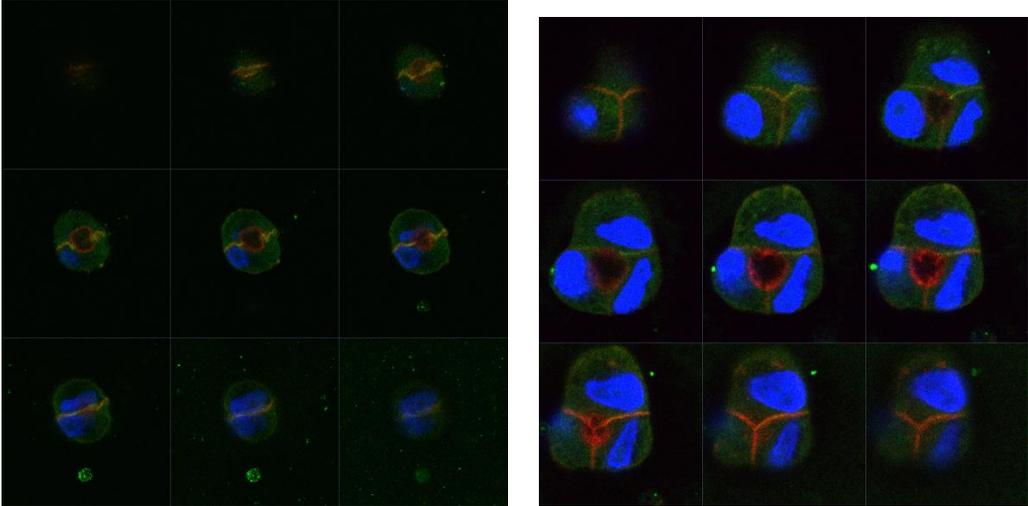
<i>AVL9</i> -1	GCTCCTGACATTTCAAATACC
<i>AVL9</i> -2	GCAAAGGACAAGAACCCAATG
<i>AVL9</i> -3 and <i>AVL9</i> -4	GGATATCTGTGTTTGCCTTAT
<i>DENND5A</i> -1 and <i>DENND5A</i> -2	GCATGTCTATGTCCCTATTCT
<i>NUPL1</i> -1 and <i>NUPL1</i> -2	GCAGTACAGACAGCAGATTGA



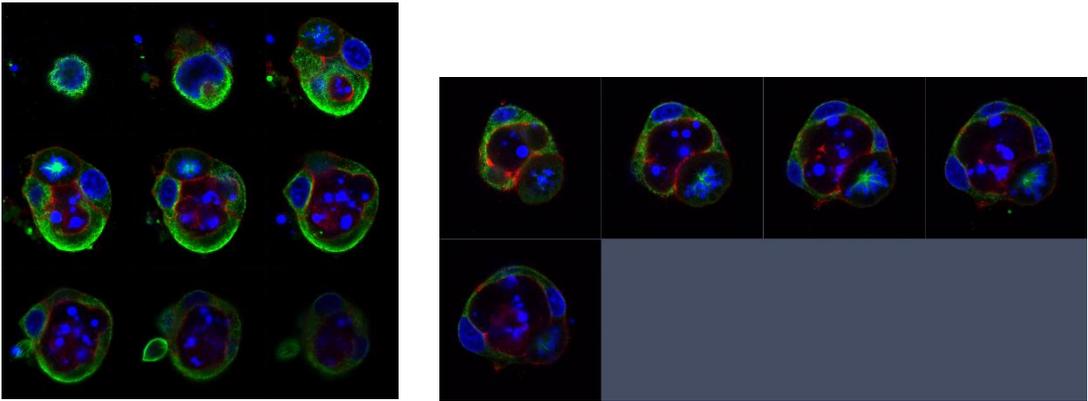
**Figure S1: Control and target gene knockdown in MDCKII cells.** The mRNA expression level of *AVL9* (A and B), *DENND5A* (C and D), and *NUPL1* (E and F) in the control and knockdown clones at passage 1 or 9 was quantified by qRT-PCR. The p-values (\*\*:  $p < 0.05$  and \*:  $p < 0.01$ ) represent the difference in the target gene expression between each knockdown clone and the control, calculated by t-tests with at least three biological replicates.



**Figure S2:** The cysts developed by *NUPL1*-knockdown clones are nearly all filled-lumen, as shown by live cell images (left) and confocal fluorescence imaging (right).



**Figure S3:** Confocal z-stack images indicate that in control cells, the lumen is established as early as the two-cell (left) or three-cell stage.



**Figure S4:** Confocal z-stack images showing monopolar spindles or spindles with poorly separated poles developed by *NUPL1*-knockdown cells.