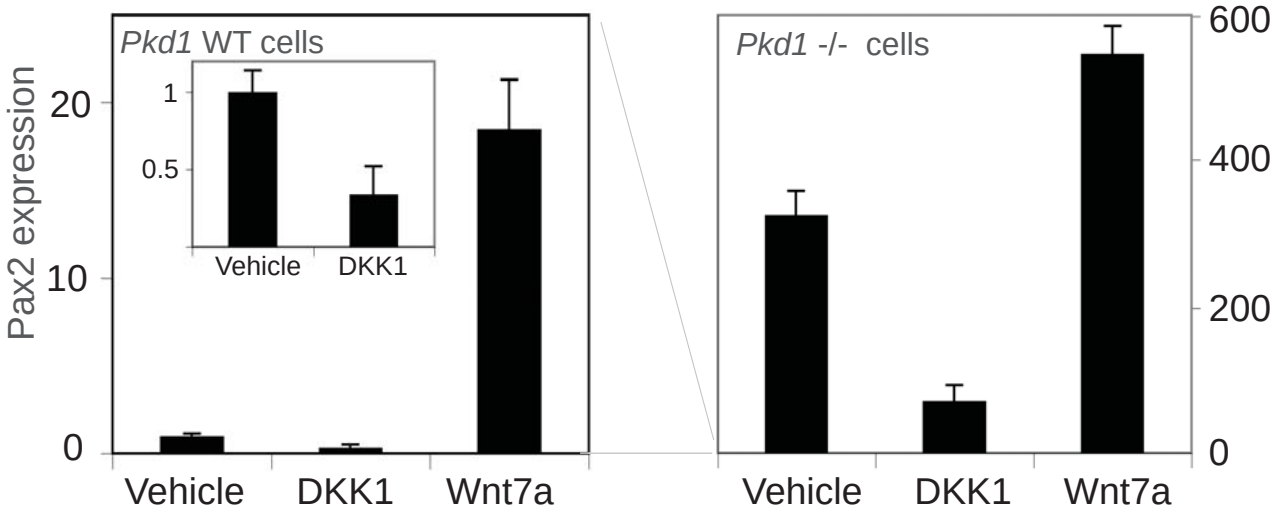
Supplemental figure 1. Effect of Wnt signaling on *Pax2* expression. This is the same data as in figure 5, but the results from *Pkd1 WT* and *Pkd1*$^{-/-}$ cells are separated into two graphs with different scales to demonstrate differences in *Pax2* expression in *Pkd1 WT* cells that are otherwise obscured in Figure 5. Recombinant DKK1, used as an Wnt antagonist, can inhibit Pax2 expression in both *Pkd1 WT* and *Pkd1*$^{-/-}$ cells (upper panels) and explants (lower panels); while recombinant Wnt 7a, used as a Wnt agonist, can increase Pax2 expression.

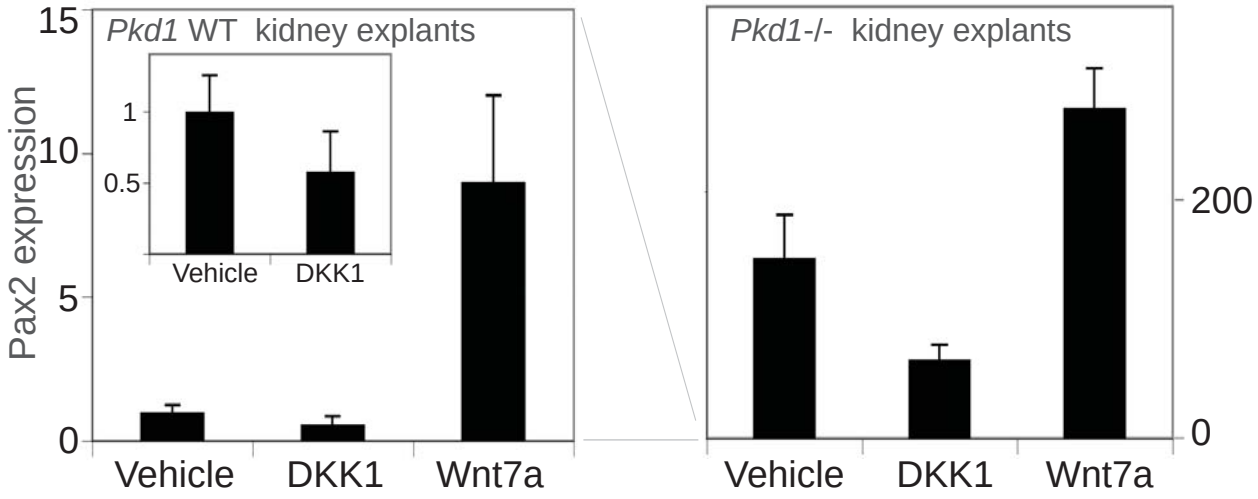
Supplemental figure 2. Rapamycin treatment cannot inhibit *Wnt7a*, *Wnt7b* and *Pax2* expression. (a-c) No significant difference of expression of *Pax2* (a), *Wnt7b* (b), Wnt7a (c) was detected before and after treatment with 200ng/ml rapamycin, in both wild type and *Pkd1*$^{-/-}$ immortalized cells. (d) After treatment with rapamycin at 200ng/ml, phosphorylation of S6-Kinase was inhibited, validating the efficiency mTOR inhibition with rapamycin in our experiment.

Supplemental figure 3. E13.5 WT and *Pkd1*$^{-/-}$ mice kidneys were placed in organ culture containing media with 100μM 8-Br-cAMP. 1 day later, recombinant DKK1 or Wnt7A were added with continued culture for 4 days with media changed daily. Fresh frozen sections were prepared for TUNEL staining, (Millipore, CA, USA, S7111). There was no significant difference in apoptotic cells among DKK1, WNT7a, and control treatment ($p > 0.05$), suggesting the effect of DKK1, WNT 7a treatment on cyst formation is not due to an effect on cell survival.

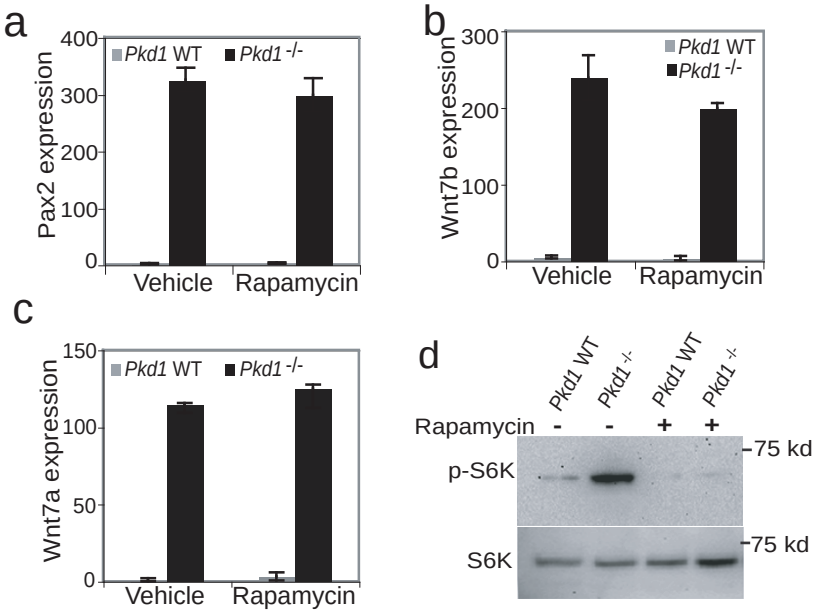
Supplemental Figure 4. Specificity of the c-Met inhibitor. Serum starved *Pkd1* WT cells or *Pkd1*$^{-/-}$ cells were treated with 5 μM c-MET inhibitor, SU 11274, for 30 min, followed by adding 50 ng/ml VEGF-A (Miltenyl Biotec GmbH, top panel), 100 ng/ml FGF (bFGF, Sigma-Aldrich, middle panel) or 100 ng/ml HGF (rmHGF, eBiosciences, bottom panel,). Cells were collected after 15 min and lysed in RIPA buffer. Phosphorylation of the receptors were determined by western blot using p-Flk-1 (Tyr 951, Santa Cruz), p-FGFR (Tyr653/654, Abgent), or p-c-MET (Tyr 1234/1235, Cell Signaling Technology Inc).

Supplementary Fig 1

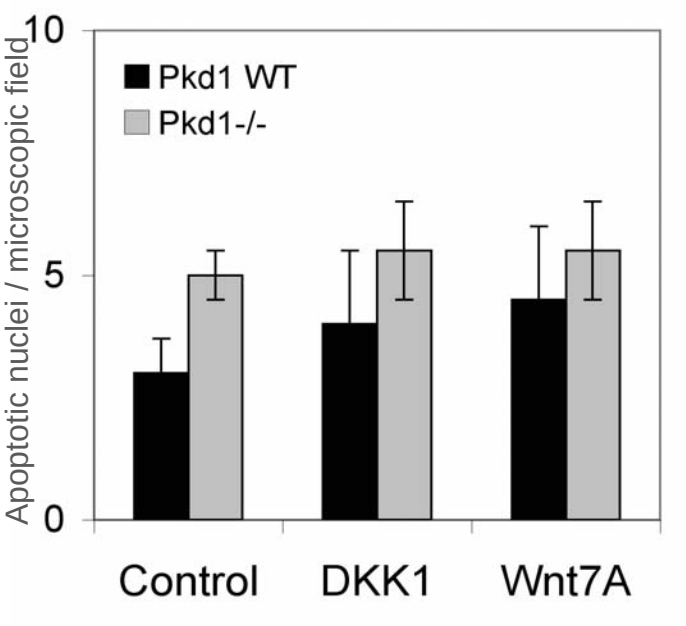




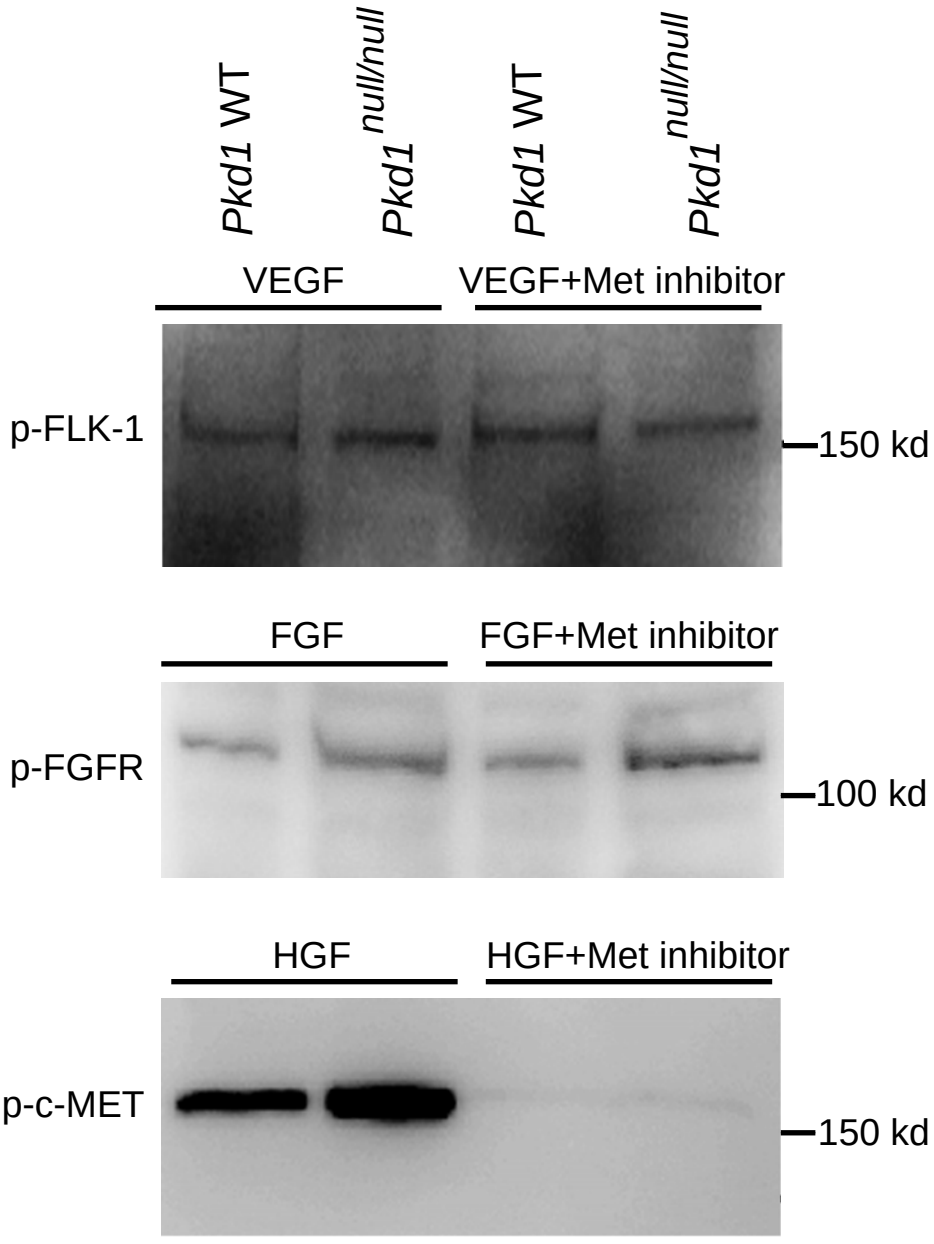
Supplemental Figure 2.



Suppl Fig 3. TUNEL staining showing no apoptosis difference before and after DKK1 and Wnt7a treatment



Met inhibitor specificity



Supplementary methods:

1. Primers for Wnt quantitative real-time PCR:

Wnt1: forward-CGACTGATCCGACAGAACCC
reverse-CGGTTGACGATCTTGCCGAA

Wnt2b: forward-CCGACGTGTCCCCATCTTC
reverse-GCCCCTATGTACCACCAGGA

Wnt3a: forward-TGGCTGAGGGTGTCAAAGC
reverse-CGTGTCACTGCGAAAGCTACT

Wnt3: forward-GATGCCCGCTCAGCTATGAA
reverse-CGGAGGCACTGTCGTACTTG

Wnt4: forward-AGGATGCTCGGACAACATCG
reverse-CGCATGTGTGTCAAGATGGC

Wnt5a: forward-TGCGGAGACAACATCGACTAT
reverse-TCCATGACACTTACAGGCTACA

Wnt6: forward-ATGTGGACTTCGGGGATGAGA
reverse-GCCTCGTTGTTGTGCAGTTG

Wnt7a: forward-CCTGGACGAGTGTCAGTTTCA
reverse-CCCGACTCCCCACTTTGAG

Wnt7b: forward-TTTGGCGTCCTCTACGTGAAG
reverse-CCCCGATCACAATGATGGCA

Wnt9b: forward-AGAGGCTTTAAGGAGACGGC
reverse-GGGGAGTCGTCACAAGTACAG

Wnt11: forward-TCATGGGGGCCAAGTTTTCC
reverse-TTCCAGGGAGGCACGTAGAG

2. Primers for *Pax2* quantitative real-time PCR:
forward-TGGCTGTGTCAGCAAAATCCT
reverse: ATTCGGCAATCTTGTCCACCA

3. Primers for 18S RNA:
forward-CGGCTACCACATCCAAGGAA
reverse-GCTGGAATTACCGCGGCT

4. Primers for Probes generation:

Wnt7a: forward-CAGTTACCAGATGCCTGGGT
reverse-TGAGACCACAAGTGCTCAGG

Wnt7b: forward-ACACCCACCAGTCACACTCA
reverse-CTGTCCATCTGTCATGTGGG

Pax2: forward-CGTTGCTCCCGCTCCTCTG
reverse-GATCCCACTGGGTCGTTAGAG