

Supplementary Table S1: 122 gene screening panel for monogenic causes of nephropathies associated to proteinuria.

Gene	Transcript	Ensembl transcript
ABCD4	NM_005050.3	ENST00000356924
ACTN4	NM_004924.4	ENST00000252699
ADAMTS13	NM_139025.4	ENST00000371929
ALG8	NM_024079.4	ENST00000299626
ALMS1	NM_015120.4	ENST00000613296
ANLN	NM_018685.4	ENST00000265748
APOA1	NM_000039.1	ENST00000236850
APOA2	NM_001643.1	ENST00000367990
APOC2	NM_000483.4	ENST00000252490
APOC3	NM_000040.1	ENST00000227667
APOL1	NM_003661.3	ENST00000397278
APOPT1	NM_032374.4	ENST00000409074
APP	NM_000484.3	ENST00000346798
ARHGAP24	NM_001025616.2	ENST00000395184
B2M	NM_004048.2	ENST00000558401
C3	NM_000064.3	ENST00000245907
CD2AP	NM_012120.2	ENST00000359314
CD46	NM_002389.4	ENST00000358170
CD151	NM_004357.4	ENST00000322008.8
CFB	NM_001710.5	ENST00000425368
CFH	NM_000186.3	ENST00000367429
CFHR1	NM_002113.2	ENST00000320493
CFHR2	NM_005666.2	ENST00000367415
CFHR3	NM_021023.5	ENST00000367425
CFHR4	NM_001201550.2	ENST00000367416
CFHR5	NM_030787.3	ENST00000256785
CFI	NM_000204.3	ENST00000394634
CLCN5	NM_000084.2	ENST00000376108
COL4A1	NM_001845.5	ENST00000375820
COL4A3	NM_000091.4	ENST00000396578
COL4A4	NM_000092.4	ENST00000396625
COL4A5	NM_000495.4	ENST00000361603
COQ2	NM_015697.7	ENST00000311469
COQ6	NM_182476.2	ENST00000334571
COQ8B	NM_024876.3	ENST00000324464
COX10	NM_001303.3	ENST00000261643
COX6B1	NM_001863.4	ENST00000246554
CRB2	NM_173689.6	ENST00000373631
CRKL	NM_005207.3	ENST00000354336.7
CST3	NM_000099.3	ENST00000376925
CUBN	NM_001081.3	ENST00000377833

DGKE	NM_003647.2	ENST00000284061
EHHADH	NM_001966.3	ENST00000231887
EMP2	NM_001424.4	ENST00000359543
ETFFA	NM_000126.3	ENST00000557943
ETFB	NM_001985.2	ENST00000309244
ETFDH	NM_004453.3	ENST00000511912
FAH	NM_000137.2	ENST00000561421
FAN1	NM_014967.4	ENST00000362065
FASTKD2	NM_014929.3	ENST00000236980
FAT1	NM_005245.3	ENST00000441802
FGA	NM_021871.2	ENST00000403106
FH	NM_000143.3	ENST00000366560
FN1	NM_212482.1	ENST00000354785
FRAS1	NM_025074.6	ENST00000512123
FREM1	NM_144966.5	ENST00000422223
FREM2	NM_207361.5	ENST00000280481
G6PC	NM_000151.3	ENST00000253801
GALT	NM_000155.3	ENST00000378842
GCDH	NM_000159.3	ENST00000222214
GDNF	NM_000514.3	ENST00000326524.6
GLA	NM_000169.2	ENST00000218516
GRIP1	NM_021150.3	ENST00000398016
GSN	NM_000177.4	ENST00000373818
HADHA	NM_000182.4	ENST00000380649
HADHB	NM_000183.2	ENST00000317799
INF2	NM_022489.3	ENST00000392634
ITGA3	NM_002204.2	ENST00000320031
KANK1	NM_015158.3	ENST00000382297
KANK2	NM_001136191.2	ENST00000586659
KANK3	NM_198471	ENST00000330915
KANK4	NM_181712.4	ENST00000371153
LAGE3	NM_006014.4	ENST00000357360.4
LAMA5	NM_005560.4	ENST00000252999
LAMB2	NM_002292.3	ENST00000418109
LCAT	NM_000229.1	ENST00000264005
LMBRD1	NM_018368.3	ENST00000370577
LMX1B	NM_002316.3	ENST00000526117
LRP2	NM_004525.2	ENST00000263816
LYZ	NM_000239.2	ENST00000261267
MAFB	NM_005461.4	ENST00000373313
MEFV	NM_000243.2	ENST00000219596
MMAA	NM_172250.2	ENST00000281317
MMAB	NM_052845.3	ENST00000545712

MMACHC	NM_015506.2	ENST00000401061
MMADHC	NM_015702	ENST00000303319
MUT	NM_000255.3	ENST00000274813
MYH9	NM_002473.5	ENST00000216181
MYO1E	NM_004998.3	ENST00000288235
NLRP3	NM_004895.4	ENST00000336119.7
NPHS1	NM_004646.3	ENST00000378910
NPHS2	NM_014625.2	ENST00000367615
NUP107	NM_020401.2	ENST00000229179
NUP133	NM_018230	ENST00000261396.3
NUP160	NM_015231	ENST00000378460.2
NUP205	NM_015135	ENST00000285968
NUP85	NM_024844	ENST00000245544.4
NUP93	NM_014669.4	ENST00000308159.9
NXF5	NM_032946.2	ENST00000473265.2
OCLR	NM_000276.3	ENST00000371113
OSGEP	NM_017807.3	ENST00000206542.8
PAX2	NM_003987.3	ENST00000428433
PDSS2	NM_020381.3	ENST00000369037
PLCE1	NM_016341.3	ENST00000260766
PMM2	NM_000303.2	ENST00000268261
PRNP	NM_000311.3	ENST00000379440
PTPRO	NM_030667.2	ENST00000281171
SCARB2	NM_005506.3	ENST00000264896
SEC61A1	NM_013336.3	ENST00000243253.7
SGPL1	NM_003901.3	ENST00000373202
SLC34A1	NM_003052.4	ENST00000324417
SMARCAL1	NM_014140.3	ENST00000357276
SOX18	NM_018419.2	ENST00000340356
TACO1	NM_016360.3	ENST00000258975
THBD	NM_000361.2	ENST00000377103
TP53RK	NM_033550.3	ENST00000372114.3
TPRKB	NM_001330390.1	ENST00000318190.7
TRPC6	NM_004621.5	ENST00000344327
TTR	NM_000371.3	ENST00000237014
WDR73	NM_032856.3	ENST00000434634
WT1	NM_024426.4	ENST00000332351
XPO5	NM_020750.2	ENST00000265351

Supplementary Table S2: List of probe-based assays.

Probe based assay	gene	company
Hs.PT.58.45621572	HPRT	IDT
Hs00172187_m1	POLR2A	Applied Biosystems
Hs00169587_m1	GADD45B	Applied Biosystems
Hs99999905_m1	GAPDH	Applied Biosystems
Hs00274384_m1	IQCB1	Applied Biosystems
Hs01026927_g1	CTGF	Applied Biosystems
Hs00998500_g1	CYR61	Applied Biosystems
Hs00950669_m1	AREG	Applied Biosystems
Hs00923599_m1	ANKRD1	Applied Biosystems
Hs00985639_m1	IL6	Applied Biosystems
Hs00159357_m1	MUC1	Applied Biosystems
Hs00560416_m1	SAV1	Applied Biosystems
Hs01125523_m1	LATS1	Applied Biosystems
Hs00966302_m1	NF2	Applied Biosystems
Hs00153380_m1	CCND2	Applied Biosystems
Hs00324396_m1	LATS2	Applied Biosystems
Hs00964416_m1	MOB1A	Applied Biosystems
Hs01397675_m1	MOB1B	Applied Biosystems
Hs00178979_m1	STK4 (MST2)	Applied Biosystems
Hs00169491_m1	STK3 (MST1)	Applied Biosystems
Hs00902712_g1	YAP1	Applied Biosystems
Hs00918044_g1	CDC42	Applied Biosystems

Supplementary Figure S1:

qPCR analysis of RNA extracted from pURECS derived from patients #2 and #3 indicated an upregulation of the Hippo central components at mRNA level as compared to healthy controls (A).

qPCR analysis revealed no statistically significant differences in CDC42 mRNA amounts (B).

Immunoblot analysis of protein extracts of pURECs revealed a reduction in CDC42 levels in patients (#2 and #3) compared to controls as shown in the western blot and in the densitometric analysis (C).

Bars are depicting SEM, asterisks indicate statistical significance as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$, **** $p < 0.001$, ns=not significant).

Supplementary figure S1

