Title: FSGS as an adaptive response to growth-induced podocyte stress

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Supplemental Table 1

	n	Weight (g)	Δ weight (%)	Ucreatinine (mg/24hrs)	Ucreatinine (% change)	Uurea (mg/24hrs)	Uprotein (mg/24hrs)	UProtCR	GS (%)	Protection
Time of nephrectomy	49	297±3		9.4±1.0		527±47	13±1	1.5±0.2	0	
At end of 16 week study										
Regular diet	6	374±14	+26%	13.4±0.7	+43%	1,071±22	75±10	5.5±0.6	39±6	No
40% Calorie reduction	6	237±5	-20%	7.2±0.2	-24%	580±45	7±1	1.0±0.2	0	Yes
20% Calorie reduction	6	296±5	0%	7.9±0.6	-16%	495±15	11±1	1.4±0.2	0	Yes
High protein	8	368±15	+24%	11.6±0.9	+23%	1,574±115	61±7	5.7±0.6	38±8	No
Low protein	7	410±7	+38%	11.0±0.9	+11%	128±44	13±2	1.2±0.2	0	Yes
High fat	5	406±7	+37%	10.9±0.4	+16%	548±36	26±4	2.4±0.3	15±5	Partial
High fat + sucrose	6	405±9	+36%	12.6±1.1	+34%	664±34	75±4	6.1±0.4	32±9	No
Regular diet + sucrose	5	401±3	+35%	13.8±0.4	+47%	639±25	76±10	5.5±0.9	35±5	No

Supplemental Table 1. Legend: Effect of modulating diet on post-nephrectomy hypertrophic glomerular injury. To simulate hypertrophic events post implantation adult heterozygous AA-4E-BP1 transgenic rats were nephrectomized at 300g and then placed on various diets for 14 weeks to determine the extent to which post-nephrectomy dietary modulation could protect against hypertrophic stress-induced glomerular injury. Urine creatinine excretion per 24 hours is a measure of muscle mass. The change in 24hour urine creatinine is a measure of change in muscle mass on the diet. Urine urea excretion per 24 hours was used to assess protein intake and catabolism. Urine protein excretion per 24 hours was used to assess the glomerular protein leak. Glomerulosclerosis (GS) (% glomeruli with adhesions) was used to assess degree of glomerular injury. 40% calorie restriction provided kidney protection but was associated with weight loss and loss of muscle mass and a higher than expected urea excretion suggesting that these animals may have been catabolic. 20% calorie restriction also provided good protection and was not associated with weight loss although muscle mass did decrease 16% over 16 weeks. Low protein diet provided protection, allowed weight gain and did not reduce muscle mass over the 16week period of observation. High fat diet provided partial protection possibly because of associated moderately reduced protein and carbohydrate intake, but if carbohydrate was added as 10% sucrose to drinking water to simulate drinking commercially available beverages (sodas) containing sugar the protection was lost. Regular diet with 10% sucrose added to drinking water significantly reduced urine urea excretion demonstrating that animals preferred drinking sweetened water to eating regular food. High protein diet was not different from regular diet by any criterion measured. These data demonstrate how nephrectomy-induced hypertrophic events can be significantly impacted by modulating diet.

Supplemental Table 2

Symbol	TG.1K.CRD	TG.1K.Rapa	TG.1K.ACEi
Aars	-0.386	-0.253	-0.185
Abcb1b	-0.757	-0.802	-0.938
Abcc2	-0.831	-0.471	-0.506
Abhd17c	-0.474	-0.728	-0.431
Ablim1	-0.179	-0.14	-0.393
Acox3	-0.31	-0.204	-0.151
Adam15	-0.416	-0.336	-0.42
Adap1	-0.515	-0.912	-0.569
Adh1	-0.475	-1.468	-0.581
Adrm1	-0.22	-0.455	-0.179
Agpat4	0.191	0.195	0.323
Agtrap	-0.306	-0.237	-0.226
Agxt2	-0.507	-0.666	-0.57
Ahcyl1	0.097	0.135	0.115
Aifm1	-0.271	-0.21	-0.346
Ak2	-0.531	-0.79	-0.494
Akap9	0.223	0.187	0.223
Akr1a1	-0.494	-0.305	-0.296
Aldh7a1	-0.373	-0.501	-0.402
Aldob	-0.234	-0.314	-0.335
Alkbh3	-0.134	-0.417	-0.198
Ankle1	-0.515	-0.654	-0.746
Ankrd44	0.337	0.605	0.303
Apcs	-0.553	-1.447	-0.658
Apeh	-0.239	-0.171	-0.239
Arap2	0.451	0.68	0.453
Arhgef18	0.646	0.21	0.282
Arhgef25	-0.266	-0.525	-0.338
Arhgef26	0.371	0.362	0.444
Arid4a	0.378	0.709	0.506
Aspm	-1.376	-0.712	-0.598
Atf7ip	0.203	0.149	0.244
Atg13	0.248	0.54	0.209
Atp11c	0.25	0.548	0.293
Atp5a1	-0.22	-0.189	-0.309
Atp6v0d1	-0.201	-0.451	-0.209
Atp6v1b2	-0.378	-0.481	-0.361
Atp6v1c1	-0.205	-0.282	-0.217
Atraid	-0.286	-0.18	-0.299
Atrx	0.26	0.292	0.34
Aurkb	-1.121	-1.068	-0.563
B3gat1	-1.42	-2.803	-1.458
Bcl2	0.275	0.86	0.463

Bdp1	0.337	0.362	0.299
Blzf1	0.308	0.368	0.268
Bmp2	-0.631	-1.321	-0.574
Boc	0.389	0.482	0.506
Bub1	-1.395	-0.957	-0.699
Bub1b	-0.932	-0.808	-0.481
C4b	-1.408	-1.806	-1.287
C7	-1.259	-1.741	-0.854
Cachd1	0.315	0.474	0.262
Cacnb2	0.477	0.892	0.906
Calml4	-0.281	-0.437	-0.259
Capg	-0.943	-0.633	-0.877
Car7	-0.933	-0.619	-0.397
Cb707485	-0.569	-0.57	-0.742
Cbs	-0.437	-0.761	-0.431
Ccbl1	-0.425	-0.977	-0.56
Ccdc102a	-0.386	-0.326	-0.294
Ccl2	-0.548	-0.818	-0.656
Ccna2	-1.113	-0.728	-0.383
Ccnb1	-1.371	-1.055	-0.63
Ccnb2	-2.034	-1.715	-0.703
Cd276	-0.539	-0.543	-0.36
Cd2ap	0.529	0.307	0.285
Cd63	-0.349	-0.57	-0.308
Cdc14a	0.409	0.174	0.184
Cdc20	-1.649	-0.819	-0.907
Cdc25c	-0.53	-0.66	-0.477
Cdc73	0.264	0.161	0.193
Cdk1	-1.591	-0.679	-0.489
Cdkn2c	-1.204	-0.648	-0.742
Cdkn3	-1.684	-1.024	-0.78
Cdsn	-0.934	-1.674	-1.22
Cenpe	-1.267	-0.844	-0.514
Cenpf	-1.458	-1.047	-0.911
Cenpi	-0.4	-0.377	-0.304
Cenpt	-0.505	-0.599	-0.437
Cep170b	-0.202	-1.031	-0.334
Cfi	-1.034	-0.78	-0.694
Cflar	0.211	0.44	0.245
Cib1	-0.347	-0.418	-0.381
Clasp2	0.184	0.371	0.222
Clec1a	0.293	0.802	0.342
Clmp	-0.706	-0.633	-0.63
Clta	-0.114	-0.169	-0.17
Cluh	-0.236	-0.266	-0.308
Cndp2	-0.549	-0.403	-0.444

Cnnm1	-0.555	-0.713	-0.387
Cnot4	0.099	0.209	0.198
Cntnap1	-0.446	-1.359	-0.766
Col16a1	-0.346	-0.723	-0.358
Col3a1	-1.034	-1.613	-1.11
Col5a1	-0.515	-0.951	-0.255
Col6a6	-1.112	-1.859	-0.979
Coq9	-0.296	-0.373	-0.314
Cox6a1	-0.523	-0.392	-0.388
Cpd	0.286	0.267	0.266
Cpne3	0.121	0.347	0.174
Cpne7	-0.377	-1.786	-0.796
Crebbp	0.197	0.18	0.256
Crip1	-0.552	-0.54	-0.73
Cript	0.373	0.717	0.367
Csnk1a1	0.093	0.138	0.127
Csrnp2	0.36	0.466	0.348
Ctsb	-0.38	-0.52	-0.227
Cxcr2	0.563	1.449	1.193
Cyp24a1	-1.249	-1.823	-1.142
Cytip	0.421	0.929	0.815
Dab2	-0.163	-0.518	-0.298
Dact2	-0.363	-0.727	-0.898
Dad1	-0.453	-0.315	-0.249
Dao	-0.382	-0.796	-0.45
Dap	-0.27	-0.742	-0.301
Dcn	-1.277	-1.097	-1.096
Dctn2	-0.204	-0.182	-0.223
Dcxr	-0.331	-1.1	-0.771
Ddx19a	-0.373	-0.294	-0.441
Decr2	-0.465	-0.658	-0.354
Depdc1	-1.063	-0.743	-0.661
Dera	-0.352	-0.479	-0.18
Dgcr8	0.344	0.401	0.293
Dhh	-0.785	-0.593	-0.843
Dhrs1	-0.191	-0.508	-0.263
Dhrs11	-0.507	-0.441	-0.708
Diaph3	-1.622	-1.238	-0.741
Dlc1	0.315	0.456	0.441
Dlgap5	-1.472	-0.796	-0.681
Dll1	-0.308	-0.436	-0.47
Dll4	0.44	1.659	1.207
Dmxl1	0.159	0.167	0.186
Dnajb4	0.249	0.557	0.415
Dnpep	-0.296	-0.247	-0.236
Dpep2	-0.39	-1.165	-0.79

Dph5	-0.263	-0.292	-0.259
Dph6	0.254	0.767	0.257
Dpp7	-0.624	-1.794	-0.463
Dpy19l4	0.254	0.577	0.258
Dpys	-0.335	-0.769	-0.619
Dynlt3	0.174	0.276	0.17
E2f7	-0.682	-0.729	-0.516
Eapp	0.446	0.793	0.41
Eci3	-0.498	-0.514	-0.477
Ecsit	-0.29	-0.599	-0.215
Ect2	-1.604	-0.952	-0.59
Efnb2	0.257	0.89	0.632
Eif3a	0.123	0.13	0.139
Elmo1	-0.315	-0.348	-0.433
Ero1a	0.461	0.19	0.404
Esf1	0.302	0.312	0.271
Etfb	-0.259	-0.147	-0.237
Exnef	-0.356	-0.418	-0.411
Ezh1	0.14	0.391	0.18
Ezh2	-0.758	-0.517	-0.365
Fabp4	-1.193	-0.786	-1.247
Fam111a	-1.628	-1.055	-0.77
Fam179b	0.308	0.318	0.275
Fam208a	0.2	0.439	0.318
Fam98a	-0.113	-0.174	-0.17
Fblim1	-0.526	-0.894	-0.516
Fbxw5	-0.306	-0.334	-0.212
Fga	-1.187	-0.617	-1.222
Fgfr4	-0.418	-0.789	-0.689
Fh	-0.256	-0.187	-0.247
Fndc5	-0.418	-0.708	-0.488
Foxj3	0.295	0.297	0.344
Foxm1	-0.65	-0.884	-0.656
Foxn3	0.177	0.263	0.296
Frs2	0.231	0.426	0.336
Ftl1	-0.799	-0.665	-0.338
Fxyd5	-0.93	-0.629	-0.652
Fyco1	0.162	0.176	0.278
Gabra1	0.449	1.198	1.123
Gadd45b	0.32	0.334	0.295
Gas2	-0.64	-0.955	-0.476
Gas2l3	-1.72	-1.106	-0.494
Gdf15	-0.578	-1.219	-0.961
Gipc1	-0.657	-0.431	-0.345
Gja1	-0.437	-0.424	-0.494
Glb1l	-0.255	-0.533	-0.242

Glb1l2	-0.325	-0.553	-0.634
Glis2	-0.213	-0.4	-0.32
Glrx5	-0.379	-0.306	-0.381
Gnaq	0.195	0.505	0.33
Gnat2	-0.849	-1.749	-0.925
Gne	-0.279	-0.254	-0.23
Gnpda1	-0.547	-0.919	-0.402
Gopc	0.213	0.281	0.331
Gosr2	-0.151	-0.341	-0.215
Got2	-0.334	-0.361	-0.368
Gpbp1	0.327	0.34	0.281
Gpcpd1	0.25	0.209	0.301
Gpnmb	-1.841	-1.117	-0.667
Gpr146	0.251	0.481	0.44
Gprc5a	-0.926	-1.184	-0.826
Grk5	0.338	0.288	0.26
Gxylt1	0.17	0.348	0.327
H2afx	-1.026	-0.743	-0.55
Hao1	-1.446	-1.589	-1.001
Havcr1	-4.047	-3.558	-3.712
Hdac9	-0.279	-0.242	-0.357
Helz	0.329	0.211	0.208
Hgd	-0.428	-0.662	-0.582
Hipk3	0.301	0.218	0.262
Hist1h1a	-0.717	-0.516	-0.471
Hist1h2ah	-1.559	-0.908	-0.463
Hist1h2ai	-1.553	-0.958	-0.805
Hist1h2bcl1	-0.841	-0.686	-0.586
Hist1h2bf	-1.259	-0.781	-0.803
Hist1h2bk	-0.554	-0.436	-0.422
Hist1h3a	-1.173	-0.837	-0.677
Hist1h4a	-0.928	-0.335	-0.371
Hist2h4	-1.567	-0.839	-0.996
Hjurp	-1.335	-0.952	-0.79
Hmbox1	0.254	0.529	0.388
Hmgxb3	-0.183	-0.245	-0.132
Hmmr	-1.556	-0.971	-0.848
Hnf1a	-0.403	-0.666	-0.621
Homer3	-0.22	-0.207	-0.185
Hook2	-0.51	-1.127	-0.628
Hsd17b4	-0.381	-0.272	-0.375
Hspa14	-0.252	-0.308	-0.178
Hspg2	-0.623	-0.895	-0.321
Htra3	-1.592	-0.799	-1.51
Ifitm2	-0.589	-0.258	-0.32
Ift81	0.217	0.255	0.126

Il18rap	0.675	1.07	1.033
Iqgap3	-1.609	-1.024	-0.658
Jun	0.25	0.575	0.125
Kctd17	-0.354	-0.806	-0.371
Kdm4c	0.153	0.16	0.145
Kif11	-0.854	-0.768	-0.584
Kif12	-0.385	-0.906	-0.816
Kif14	-0.772	-0.483	-0.478
Kif18a	-0.864	-0.551	-0.524
Kif18b	-1.166	-0.976	-0.608
Kif1b	0.145	0.088	0.232
Kif20a	-1.514	-1.055	-0.839
Kif20b	-1.001	-0.482	-0.494
Kif23	-1.161	-0.96	-0.52
Kif2c	-1.257	-1.019	-0.865
Kif4a	-1.348	-1.27	-0.564
Kifc2	-0.213	-0.397	-0.492
Klhl9	0.172	0.751	0.326
Kmt2e	0.223	0.335	0.248
Kmt5b	0.209	0.275	0.151
Knl1	-1.811	-0.974	-0.669
Knstrn	-1.221	-0.695	-0.555
Kntc1	-1.044	-0.706	-0.496
Krt35	0.769	0.833	0.365
Lactb2	-0.485	-0.347	-0.473
Lamb1	-0.416	-0.29	-0.616
Lamb2	0.133	0.155	0.271
Lats1	0.304	0.284	0.306
Lats2	0.435	0.184	0.334
Lemd3	0.287	0.389	0.28
Lgals1	-0.658	-1.012	-0.408
Lgals3	-1.701	-0.881	-0.529
Lif	-0.506	-1.013	-0.629
Lifr	0.382	0.943	0.572
Lima1	0.224	0.268	0.284
Lmna	-0.438	-0.486	-0.349
LOC100359668	-0.449	-0.959	-0.453
LOC100360087	-0.807	-0.737	-0.456
LOC100362606	-0.424	-0.54	-0.303
LOC100363177	-0.813	-1.085	-0.445
LOC100364016	-1.723	-1.031	-0.548
LOC100912338	-0.528	-0.312	-0.57
LOC102551340	0.559	1.22	0.545
LOC102555086	-0.359	-0.623	-0.248
LOC102555377	0.422	0.404	0.488
LOC680498	-0.74	-0.654	-0.462

LOC684841	-1.103	-0.835	-0.461
LOC688389	-0.458	-0.89	-0.507
LOC688553	-1.006	-1.163	-0.891
LOC691135	0.497	0.476	0.678
Lpcat1	0.31	0.515	0.351
Lrch3	0.291	0.197	0.252
Lrrc16a	-0.265	-0.756	-0.356
Lrrn1	0.377	1.224	1.342
Luzp1	0.392	0.312	0.324
Lysmd3	0.299	0.327	0.366
Lyst	0.191	0.362	0.253
Mab21l3	-0.487	-1.462	-0.947
Mafk	0.284	0.261	0.259
Magi1	0.249	0.245	0.195
Man1a1	0.522	0.283	0.318
Mcm10	-0.96	-0.693	-0.319
Mcoln1	-0.298	-0.197	-0.177
Med13	0.113	0.28	0.21
Meis2	0.142	0.519	0.217
Melk	-1.089	-0.774	-0.654
Mettl10	0.224	0.255	0.201
Mettl14	0.179	0.266	0.238
Mgp	-0.384	-0.376	-0.232
Mir23a	-0.742	-1.621	-0.954
Mlph	-0.772	-1.334	-0.58
Mmp28	-0.873	-0.69	-0.403
Mmp8	0.693	0.977	1.092
Mns1	-0.348	-0.438	-0.428
Mob3b	-0.482	-0.56	-0.635
Mroh1	-0.242	-0.52	-0.403
Mrpl37	-0.306	-0.609	-0.289
Msl2	0.218	0.334	0.27
Mt1m	-1.382	-1.165	-0.754
Mterf1	0.181	0.311	0.094
Mtf2	0.262	0.573	0.268
Mtmr11	-0.285	-0.528	-0.545
Mxra8	-0.407	-0.709	-0.27
Myadm	-0.45	-0.507	-0.239
Mybl2	-0.624	-0.446	-0.577
Mybpc2	-0.58	-1.093	-0.639
Myo9a	0.305	0.176	0.221
Nabp1	-0.375	-1.069	-0.623
Nagk	-0.304	-0.528	-0.394
Naprt	-0.42	-0.398	-0.407
Nasp	-0.413	-0.503	-0.345
Ncapd2	-0.532	-0.695	-0.546

Ncapd3	-0.279	-0.447	-0.203
Ncapg	-1.492	-1.293	-0.751
Ncaph	-1.679	-1.481	-0.858
Ndc80	-1.513	-0.751	-0.591
Ndrg1	-0.798	-0.594	-0.532
Ndufa3	-0.38	-0.467	-0.546
Nefm	-0.597	-1.429	-0.675
Neil1	-0.49	-0.603	-0.418
Ninl	-0.766	-1.41	-0.664
Nipbl	0.279	0.314	0.299
Nit1	-0.243	-0.334	-0.25
Nmnat3	-0.39	-0.505	-0.6
Notch1	0.273	0.688	0.534
Npdc1	-0.393	-0.569	-0.245
Nr1h3	-0.484	-0.687	-0.234
Nrg1	-0.687	-0.965	-0.695
Nt5dc2	-0.557	-0.806	-0.315
Ntn4	0.581	1.327	1.052
Nubp2	-0.353	-0.313	-0.278
Nuf2	-1.425	-0.961	-0.591
Nusap1	-1.393	-0.797	-0.622
Opcml	0.885	0.646	0.771
Ophn1	0.36	0.904	0.428
Orc3	0.136	0.339	0.149
Otud4	0.156	0.361	0.225
Oxct1	-0.335	-0.375	-0.453
P2ry10	0.293	0.862	0.645
P2ry2	-0.609	-0.902	-0.776
Palm	-0.409	-0.391	-0.365
Parp3	-0.355	-0.354	-0.291
Pbx1	0.346	0.514	0.473
Pcmtd1	0.348	0.316	0.165
PCOLCE2	-0.802	-0.993	-0.864
Pdcd4	0.315	0.67	0.299
Pdgfra	-0.536	-0.804	-0.368
Pdia5	0.425	0.521	0.704
Pdlim7	-0.623	-1.088	-0.487
Pdpk1	0.152	0.356	0.184
Pdzd2	0.259	0.493	0.344
Pecr	-0.494	-0.49	-0.734
Pex16	-0.421	-0.343	-0.367
Pfn1	-0.319	-0.359	-0.211
Phb2	-0.336	-0.194	-0.247
Phf3	0.171	0.171	0.171
Phip	0.318	0.578	0.391
Pi16	-0.464	-0.8	-0.609

Pias2	0.238	0.412	0.242
Pla2g16	0.265	0.342	0.236
Plcxd2	-0.636	-0.824	-0.631
Plekha3	0.135	0.231	0.173
Plekhb2	-0.275	-0.252	-0.217
Plk1	-1.599	-1.077	-0.61
Plp2	-0.6	-0.439	-0.269
Pls1	-0.537	-0.566	-0.575
Plxna4	0.28	0.594	0.514
Pnldc1	-0.384	-0.523	-0.467
Pnpla8	0.3	0.361	0.259
Ppa2	-0.37	-0.207	-0.306
Ppef2	-0.633	-0.527	-0.94
Ppil4	0.216	0.366	0.334
Ppm1j	-0.373	-0.86	-0.443
Ppp4r1	-0.229	-0.16	-0.136
Ppp4r2	0.252	0.377	0.209
Ppp4r3b	0.155	0.389	0.138
Pqlc3	-0.668	-0.508	-0.564
Prc1	-1.829	-1.279	-0.561
Prex2	0.285	0.66	0.737
Prf1	0.931	0.802	1.792
Prkab1	-0.268	-0.375	-0.283
Prkar2a	0.238	0.314	0.219
Proser2	0.48	0.641	0.53
Prpf18	0.185	0.229	0.183
Prr11	-0.921	-0.912	-0.471
Prrc2c	0.494	0.191	0.229
Psph	-0.333	-0.752	-0.321
Ptbp3	0.236	0.323	0.25
Pthlh	-0.541	-1.115	-0.603
Ptpru	0.522	0.454	0.49
Ptprz1	1.341	1.1	1.3
Pttg1	-1.013	-0.966	-0.591
Pura	0.251	0.424	0.337
Pxk	0.273	0.222	0.235
Qdpr	-0.374	-0.302	-0.438
Qser1	0.359	0.309	0.334
Rab11fip3	-0.276	-0.754	-0.34
Racgap1	-1.393	-0.952	-0.591
Rai14	0.189	0.367	0.234
Rbms2	0.334	0.375	0.324
Rc3h1	0.309	0.287	0.288
Renbp	-0.384	-1.45	-0.36
RGD1306148	0.197	0.204	0.139
RGD1309534	-0.288	-0.429	-0.395

RGD1309730	0.279	0.304	0.216
RGD1562378	-0.373	-0.236	-0.301
RGD1562451	-0.644	-0.715	-0.652
RGD1562608	0.37	0.208	0.303
Rgs16	-1.174	-0.704	-1.241
Rgs6	0.588	0.73	0.544
Rhoc	-0.44	-0.427	-0.316
Rhod	-0.411	-0.532	-0.387
Rnase6	0.502	0.732	1.314
Rpp25	-0.749	-1.202	-0.807
Rprd2	0.18	0.207	0.18
Rrm2	-1.503	-1.304	-0.769
Rsf1	0.179	0.402	0.236
Samd15	0.46	0.658	0.61
Sat2	-0.225	-0.646	-0.668
Sbno2	-0.375	-0.574	-0.203
Scai	0.37	0.29	0.249
Scarf2	-0.56	-0.569	-0.284
Scly	-0.562	-1.22	-0.657
Sec63	0.244	0.28	0.223
Sell	0.681	1.44	1.502
Serinc2	-0.673	-0.639	-0.503
Serpinb8	-0.447	-0.618	-0.561
Serpine1	-1.058	-1.035	-0.931
Serpine2	-0.632	-0.913	-0.441
Serpinf2	-0.53	-0.322	-0.497
Sgo1	-0.787	-0.715	-0.171
Sidt2	-0.224	-0.166	-0.202
Slc12a8	-0.318	-0.437	-0.358
Slc1a5	-0.477	-0.36	-0.425
Slc22a12	-0.409	-0.801	-0.537
Slc25a37	0.431	0.285	0.262
Slc2a6	-0.624	-0.555	-0.399
Slc34a2	-0.894	-1.281	-1.187
Slc38a3	-0.764	-0.687	-0.705
Slc41a2	-0.388	-0.878	-0.386
Slc9a3r1	-0.434	-0.498	-0.419
Slc9a4	-0.628	-0.419	-0.495
Slmap	0.331	0.456	0.277
Smg7	0.279	0.431	0.321
Smim14	0.19	0.461	0.307
Snap91	-0.404	-0.719	-0.397
Snrpa	-0.206	-0.316	-0.321
Sos1	0.384	0.28	0.323
Sp4	0.319	0.537	0.257
Spata13	0.507	0.429	0.466

Spcs2	0.186	0.71	0.26
Spp1	-1.367	-1.675	-1.645
Srcin1	-0.349	-1.042	-0.571
Srebf1	-0.538	-0.547	-0.605
Stag1	0.121	0.273	0.215
Stag2	0.123	0.351	0.197
Stk38l	-0.3	-0.432	-0.506
Ston2	0.316	0.416	0.275
Stx8	-0.543	-0.741	-0.475
Tagln	-1.537	-1.993	-0.57
Taok1	0.181	0.132	0.203
Tbc1d1	-0.552	-0.774	-0.432
Tbc1d13	-0.271	-0.372	-0.251
Tbx10	-0.472	-1.547	-0.697
Tcea3	-0.411	-0.611	-0.69
Tceal9	-0.265	-0.233	-0.231
Tes	-0.654	-0.389	-0.506
Tff3	-0.726	-1.021	-0.808
Tgfbr3	0.574	0.431	0.419
Tgm2	-0.437	-0.343	-0.212
Tgoln2	0.141	0.265	0.169
Tmed8	0.263	0.458	0.414
Tmem150a	-0.204	-0.46	-0.29
Tmem183a	-0.3	-0.279	-0.205
Tmem37	-0.528	-1.054	-0.446
Tmem47	0.286	0.992	0.496
Tmem63b	-0.136	-0.348	-0.136
Tmppe	0.283	0.483	0.445
Tmtc1	0.363	0.207	0.391
Tnc	-1.169	-1.224	-1.041
Tnfsf10	0.509	1.242	0.855
Top2a	-1.846	-0.908	-0.436
Topaz1	-0.715	-0.806	-0.799
Tpx2	-1.706	-1.075	-0.693
Trappc1	-0.469	-0.513	-0.373
Trem2	-0.874	-0.782	-0.549
Trib2	0.22	0.511	0.208
Trim33	0.278	0.229	0.216
Trip11	0.206	0.438	0.298
Troap	-1.571	-1.256	-0.81
Ttc17	0.186	0.399	0.285
Tubb6	-1.435	-0.412	-0.62
Tusc3	0.201	0.247	0.128
Uap1l1	-0.454	-1.125	-0.409
Ube2t	-0.744	-0.508	-0.477
Ubqln4	-0.251	-0.147	-0.249

Ufl1	0.178	0.35	0.205
Ugcg	0.745	0.587	0.5
Ugdh	-0.42	-0.325	-0.267
Uhrf1	-1.345	-0.67	-0.444
Unc5c	0.641	0.677	0.511
Uqcrc1	-0.285	-0.232	-0.268
Usp25	0.196	0.315	0.205
Usp48	0.148	0.21	0.256
Vim	-0.192	-0.485	-0.274
Vps13a	0.33	0.183	0.214
Vps29	-0.237	-0.441	-0.276
Wdr44	0.294	0.279	0.269
Wdr72	-0.365	-0.307	-0.432
Wnk4	-0.449	-1.105	-0.869
Wwc3	0.253	0.251	0.251
Xpnpep1	-0.203	-0.366	-0.289
Xylb	-0.404	-0.908	-0.573
Ypel2	-0.561	-0.299	-0.424
Ywhae	-0.114	-0.097	-0.073
Zbtb10	0.623	0.297	0.322
Zbtb11	0.257	0.358	0.238
Zcchc11	0.304	0.281	0.21
Zcchc6	0.199	0.31	0.33
Zdhhc17	0.147	0.438	0.172
Zeb1	0.217	0.167	0.249
Zfp280c	0.187	0.233	0.239
Zfp280d	0.356	0.229	0.232
Zfp292	0.363	0.498	0.251
Zfp354c	0.556	0.769	0.829
Zfp62	0.187	0.372	0.203
Zfp638	0.252	0.362	0.252
Zfpl1	-0.2	-0.346	-0.181
Zhx1	0.23	0.318	0.255
Zmynd11	0.273	0.273	0.153
Zwint	-0.27	-0.341	-0.378

Supplemental Table 2 legend: Log Fold changes(log_2) for 538 genes expressed significantly differently (either up or down) between the TG.1K.ALD rats that developed FSGS and the three groups that were prevented by treatment from developing FSGS (TG.1K.CRD, TG.1K.Rapa and TG.1K.ACEi).

Supplemental Table 3

GeneSymbol	log_2fc_CR.Adlib	log_2fc_Rapa.Adlib	log_2fc_ACE.Adlib	Categories in Table5
Aurkb	-1.12	-1.07	-0.56	1,2,3,4
Cenpe	-1.27	-0.84	-0.51	1,2,3,4
Ndc80	-1.51	-0.75	-0.59	1,2,3,4
Nuf2	-1.42	-0.96	-0.59	1,2,3,4
Plk1	-1.60	-1.08	-0.61	1,2,3,4
Bub1	-1.39	-0.96	-0.70	1,2,3
Kif11	-0.85	-0.77	-0.58	1,2,3
Sgo1	-0.79	-0.71	-0.17	1,2,3
Tpx2	-1.71	-1.07	-0.69	1,2,3
Zwint	-0.27	-0.34	-0.38	1,2,3
Bub1b	-0.93	-0.81	-0.48	2,3,4
Cdc20	-1.65	-0.82	-0.91	2,3,4
Cdk1	-1.59	-0.68	-0.49	2,3,4
Kif4a	-1.35	-1.27	-0.56	2,3,4
Racgap1	-1.39	-0.95	-0.59	2,3,4
Ccnb1	-1.37	-1.06	-0.63	1,3,4
Cdc14a	0.41	0.17	0.18	1,3,4
Lats1	0.30	0.28	0.31	1,3,4
Nusap1	-1.39	-0.80	-0.62	1,3,4
Pttg1	-1.01	-0.97	-0.59	1,3,4
Top2a	-1.85	-0.91	-0.44	1,3,4
Cenpi	-0.40	-0.38	-0.30	2,3
Csnk1a1	0.09	0.14	0.13	2,3
Dctn2	-0.20	-0.18	-0.22	2,3
Knl1	-1.81	-0.97	-0.67	2,3
Kntc1	-1.04	-0.71	-0.50	2,3
Mybl2	-0.62	-0.45	-0.58	2,3
Pdlim7	-0.62	-1.09	-0.49	2,3
Pura	0.25	0.42	0.34	2,3
Ccna2	-1.11	-0.73	-0.38	1,3
Cenpf	-1.46	-1.05	-0.91	1,3
Cenpt	-0.51	-0.60	-0.44	1,3
Kif2c	-1.26	-1.02	-0.87	1,3
Ninl	-0.77	-1.41	-0.66	1,3
Bcl2	0.28	0.86	0.46	3,4
Lats2	0.44	0.18	0.33	3,4

Ect2	-1.60	-0.95	-0.59	1,4
Hmmr	-1.56	-0.97	-0.85	1,4
Lmna	-0.44	-0.49	-0.35	1,4
Ncapd2	-0.53	-0.70	-0.55	1,4
Stag1	0.12	0.27	0.21	1,4
Cd2ap	0.53	0.31	0.29	4
Diaph3	-1.62	-1.24	-0.74	4
Gipc1	-0.66	-0.43	-0.34	4
Kif14	-0.77	-0.48	-0.48	4
Kif20a	-1.51	-1.05	-0.84	4
Kif20b	-1.00	-0.48	-0.49	4
Kif23	-1.16	-0.96	-0.52	4
Klhl9	0.17	0.75	0.33	4
mir-23	-0.74	-1.62	-0.95	4
Pfn1	-0.32	-0.36	-0.21	4
Prc1	-1.83	-1.28	-0.56	4
Rab11fip3	-0.28	-0.75	-0.34	4
Rhoc	-0.44	-0.43	-0.32	4
Topaz1	-0.71	-0.81	-0.80	4
Bmp2	-0.63	-1.32	-0.57	3
Cdc25c	-0.53	-0.66	-0.48	3
Clasp2	0.18	0.37	0.22	3
Dlgap5	-1.47	-0.80	-0.68	3
Dynlt3	0.17	0.28	0.17	3
Fbxw5	-0.31	-0.33	-0.21	3
Foxm1	-0.65	-0.88	-0.66	3
Gadd45b	0.32	0.33	0.30	3
Jun	0.25	0.58	0.13	3
Kif18a	-0.86	-0.55	-0.52	3
Kif18b	-1.17	-0.98	-0.61	3
Nrg1	-0.69	-0.96	-0.70	3
Pdgfra	-0.54	-0.80	-0.37	3
Phb2	-0.34	-0.19	-0.25	3
Phip	0.32	0.58	0.39	3
Pthlh	-0.54	-1.12	-0.60	3
Slc9a3r1	-0.43	-0.50	-0.42	3
Spp1	-1.37	-1.68	-1.65	3
Tnc	-1.17	-1.22	-1.04	3
Trim33	0.28	0.23	0.22	3
Ywhae	-0.11	-0.10	-0.07	3
Atrx	0.26	0.29	0.34	*1*

Ccnb2	-2.03	-1.72	-0.70	*1*
Hjurp	-1.33	-0.95	-0.79	*1*
Kmt5b	0.21	0.27	0.15	*1*
Knstrn	-1.22	-0.70	-0.56	*1*
Ncapd3	-0.28	-0.45	-0.20	*1*
Ncapg	-1.49	-1.29	-0.75	*1*
Stag2	0.12	0.35	0.20	*1*

Supplemental Table 3 legend: Subset of the 538 genes shown in Supplemental Table 2 as identified in Table 5 by Ingenuity Pathway Analysis as related to cell cycling.