

Supplementary Table 1

Table S1. The list of 53 genes which represent monogenic causes of human focal segmental glomerulosclerosis and /or steroid-resistant nephrotic syndrome.

Gene	protein	Mode of inheritance	Ref.
<i>ACTN4</i>	Actinin, alpha 4	AD	[1]
<i>ADCK4</i>	AarF domain containing kinase 4	AR	[2]
<i>ALG1</i>	ALG1 chitobiosyldiphosphodolichol Beta-Mannosyltransferase	AR	[3]
<i>ARHGDI1</i>	Rho GDP dissociation inhibitor (GDI) alpha	AR	[4]
<i>ANLN</i>	Actin-binding protein anillin	AD	[5]
<i>APOL1</i>	Apolipoprotein L-1	unknown	[6]
<i>CD2AP</i>	CD2 associated protein	AR	[7]
<i>COL4A3</i>	Collagen type IV alpha 3 chain	AR/AD	[8]
<i>COL4A4</i>	Collagen type IV alpha 4 chain	AR	[8]
<i>COL4A5</i>	Collagen type IV alpha 5 chain	XL	[8]
<i>COQ2</i>	Coenzyme Q2 4-hydroxybenzoate polyprenyltransferase	AR	[9]
<i>COQ6</i>	Coenzyme Q6 monooxygenase	AR	[10]
<i>CRB2</i>	Crumbs, Drosophila, Homolog of 2	AR	[11]
<i>CUBN</i>	Cubilin	AR	[12]
<i>DGKE</i>	Diacylglycerol kinase epsilon	AR	[13]
<i>EMP2</i>	Epithelial membrane protein 2	AR	[14]
<i>FAT1</i>	Fat tumor suppressor, drosophila, homolog of, 1	AR	[15]
<i>ITGA3</i>	Integrin, alpha 3	AR	[16]
<i>ITGB4</i>	Integrin, beta 4	AR	[17]
<i>KANK1</i>	KN motif and ankyrin repeat domain-containing protein 1	AR	[18]
<i>KANK2</i>	KN motif and ankyrin repeat domain-containing protein 2	AR	[18]
<i>KANK4</i>	KN motif and ankyrin repeat domain-containing protein 4	AR	[18]
<i>LAGE3</i>	L antigen family member 3	AR	[19]
<i>LAMB2</i>	Laminin, beta 2	AR	[20]
<i>LCAT</i>	Lecithin-Cholesterol Acyltransferase	AR	[21]
<i>LMX1B</i>	LIM Homeobox Transcription Factor 1 Beta	AD	[22]
<i>MAGI2</i>	Membrane-associated guanylate kinase, WW and PDZ domainscontaining 2	AR	[23]
<i>MYH9</i>	Myoson heavy chain 9, nonmuscle	AD	[24]
<i>MYO1E</i>	Homo sapiens myosin IE	AR	[25]
<i>NPHS1</i>	Nephrin	AR	[26]
<i>NPHS2</i>	Podocin	AR	[27]
<i>NUP107</i>	Nucleoporin, 107-KD	AR	[28]
<i>NUP93</i>	Nucleoporin 133-KD	AR	[29]
<i>NUP205</i>	Nucleoporin, 205-KD	AR	[29]
<i>NUP85</i>	Nucleoporin 85-KD	AR	[30]
<i>NUP133</i>	Nucleoporin, 93-KD	AR	[30]
<i>NXF5</i>	Nuclear RNA export factor 5	XL	[31]
<i>OSGEP</i>	O-sialoglycoprotein endopeptidase	AR	[19]
<i>PDSS2</i>	Prenyl (decaprenyl) diphosphate synthase, subunit 2	AR	[32]

<i>PLCE1</i>	Phospholipase C, epsilon 1	AR	[33]
<i>PTPRO</i>	Protein tyrosine phosphatase, receptor type, O	AR	[34]
<i>SCARB2</i>	Scavenger receptor class B, member 2	AR	[35]
<i>SGPL1</i>	Sphingosine 1 phosphate lyase 1	AR	[36]
<i>SMARCA1</i>	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a-like 1	AR	[37]
<i>TP53RK</i>	TP53-regulating kinase	AR	[19]
<i>TPRKB</i>	TP53RK binding protein	AR	[19]
<i>TRPC6</i>	Transient receptor potential cation channel, subfamily C, member 6	AD	[38]
<i>WDR73</i>	WD repeat-containing protein 73	AR	[39]
<i>WT1</i>	Wilms Tumor 1	AD	[40]
<i>XPO5</i>	Exportin 5	AR	[29]

Reference paper of each genes

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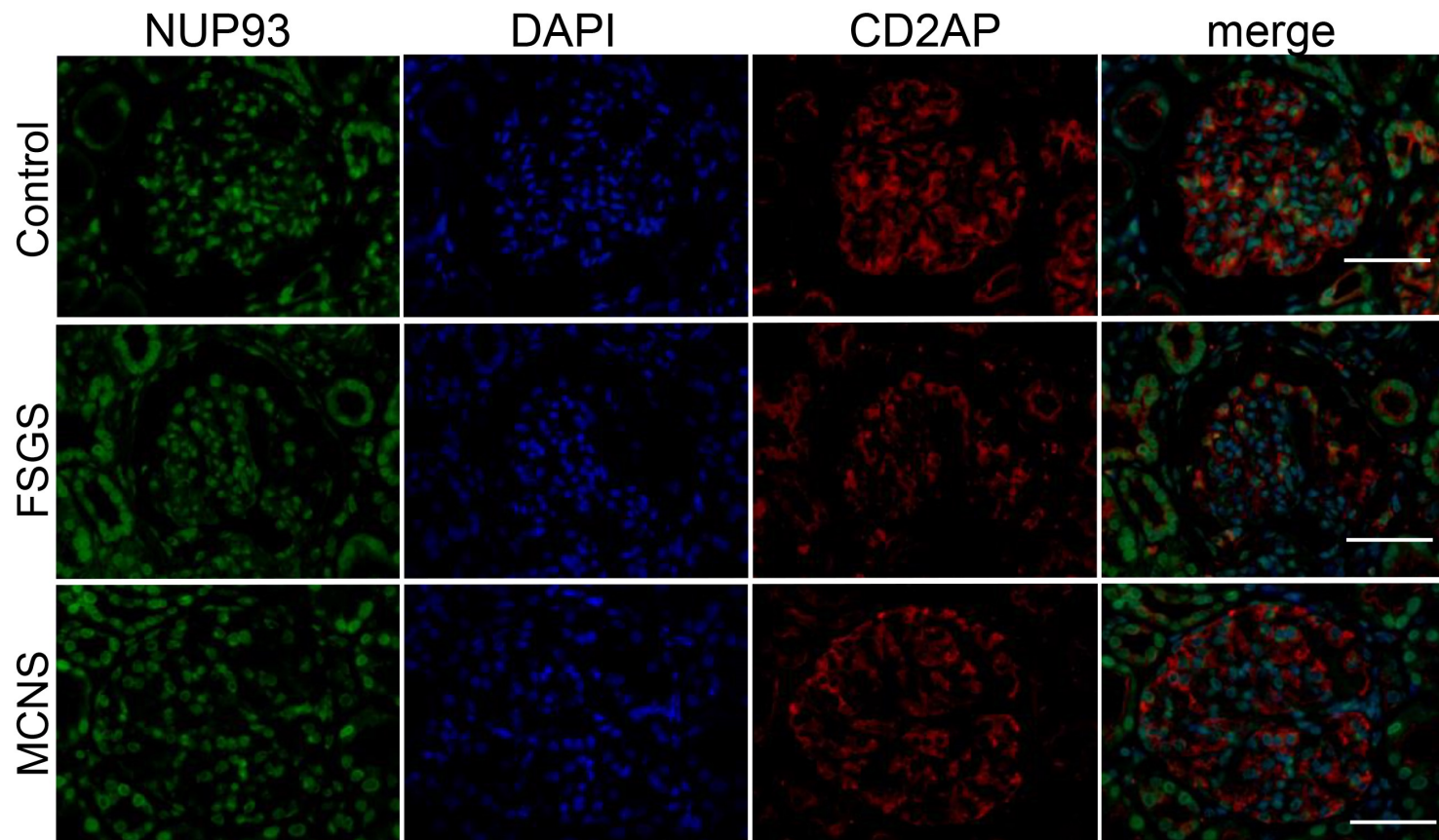
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Supplementary Table 2

Table S2. Variant frequencies of the *NUP93* variants (Data from gnomAD*)

population	c.1573C>T				c.1886A>G			
	Allele count	Allele number	Number of Homozygotes	Allele frequency	Allele count	Allele number	Number of Homozygotes	Allele frequency
European (non-Finish)	1	111474	0	0.000008971	1	111406	0	0.000008976
European (Finish)	0	22260	0	0.000	0	22264	0	0.000
Latino	1	33576	0	0.00002978	0	33408	0	0.000
Ashkenazi Jewish	0	9842	0	0.000	0	9824	0	0.000
African	0	15266	0	0.0000	0	15298	0	0.000
South Asian	0	30782	0	0.000	0	30580	0	0.000
East Asian	0	17224	0	0.000	0	17220	0	0.000
Other	0	5472	0	0.000	0	5472	0	0.000
total	2	245916	0	0.000008133	1	245472	0	0.000004074

*gnomAD, Genome Aggregation Database ³¹



Supplementary data, Figure S1