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Supplementary Material

Genetic variants for childhood nephrotic syndrome and corticosteroid therapy response

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1 Supplementary Figures and Tables

Supplementary Table 1 NS Allele Descriptions

SNP	Gene	Chromosome	NS Risk Allele	Position	Type
rs1129740	HLA-DQA1	6	A	32609103	Missense C34Y
rs9348883	BTNL2	6	A	32358549	Intronic variant
rs4642516	HLA-DR/DQ	6	T	32657543	Intergenic
rs3134996	HLA-DR/DQ	6	A	32636866	Intergenic
rs9273371	Intergenic	6	T	32626565	Intergenic
rs2637678	CALHM6	6	T	116787378	Intergenic
rs56117924	NPHS1/KIRREL	19	A	36334182	Intronic variant
rs6478109	TFNSF15	9	G	117568766	Upstream transcript variant
rs34213471	TNFRSF11A	18	A	60008436	Intronic variant

Supplementary Table 2 Risk allele frequency for SRNS vs. Controls: [a] P-values from chi square test of independence. *Significance after Bonferroni correction with $\alpha = 0.05$. SNP, single nucleotide polymorphism.

SNP	Risk Allele	Gene	Risk AF: Controls Risk/Total (frequency)	Risk AF: SRNS Risk/Total (frequency)	Odds Ratio (95% CI)	P-value[a]
rs1129740	A	*HLA-DQA1*	94628/191328 (0.50)	176/326 (0.54)	1.2 (1.0-1.5)	0.1
rs9348883	A	*BTNL2*	15739/264690 (0.06)	184/342 (0.54)	18.3 (14.9-22.8)	$<2.2x10^{-16}$*
rs4642516	T	*HLA-DR/DQ*	138950/264690 (0.52)	201/346 (0.58)	1.3 (1.0-1.6)	0.04
rs3134996	A	*HLA-DR/DQ*	94736/264690 (0.36)	256/352 (0.73)	4.8 (3.8-6.0)	$<2.2x10^{-16}$*
rs9273371	T	*Intergenic*	67317/264690 (0.25)	119/350 (0.34)	1.5 (1.2-1.9)	$2.4x10^{-4}$*
rs2637678	T	*CALHM6*	167819/264690 (0.63)	229/352 (0.65)	1.1 (0.9-1.3)	0.5
rs56117924	A	*NPHS1/KIRREL*	14543/264690 (0.06)	24/352 (0.07)	1.3 (0.8-1.9)	0.3
rs6478109	G	*TNFSF15*	224655/328718 (0.68)	268/350 (0.77)	1.5 (1.2-1.9)	$9.4x10^{-4}$*
rs34213471	A	*TNFRSF11A*	14311/264690 (0.05)	30/352 (0.09)	1.6 (1.1 to 2.4)	$9.8x10^{-3}$

Supplementary Table 3 Odds ratio risk analysis for SSNS vs. SRNS: [a] P-values from Fisher exact test; *significance after Bonferroni correction with $\alpha = 0.05$.

# Risk Alleles	# SRNS	# SSNS	Total SRNS	Total SSNS	OR	Lower CI	Upper CI	P-value[a]
0-2	17	276	123	592	0.2	0.1	0.3	2.1×10^{-12}*
3-6	60	272	123	592	1.1	0.8	1.7	0.6
7-11	46	44	123	592	7.4	4.6	12.0	8.2×10^{-16}*

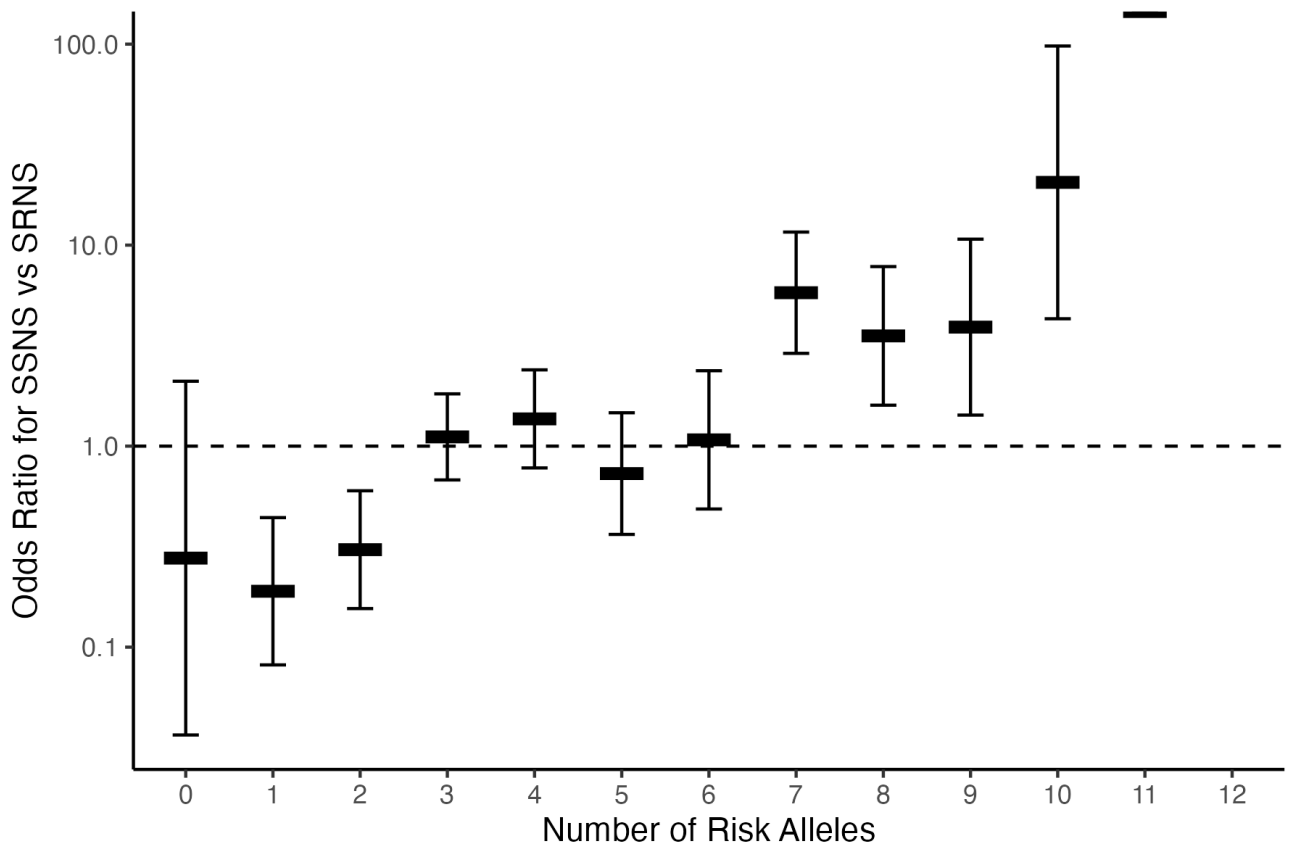
Supplementary Table 4 Odds ratio risk analysis for SSNS vs. SRNS with ungrouped counts: [a] P-values from Fisher exact test; *significance after Bonferroni correction with $\alpha = 0.05$

# Risk Alleles	# SRNS	# SSNS	Total SRNS	Total SSNS	OR	Lower CI	Upper CI	P-value[a]
0	1	17	123	592	0.3	0.04	2.1	0.3
1	6	126	123	592	0.2	0.1	0.4	3.0×10^{-6}*
2	10	133	123	592	0.3	0.2	0.6	1.7×10^{-4}*
3	24	106	123	592	1.1	0.7	1.8	0.7
4	18	66	123	592	1.4	0.8	2.4	0.3
5	10	64	123	592	0.7	0.4	1.5	0.4
6	8	36	123	592	1.1	0.5	2.4	0.8
7	18	17	123	592	5.8	2.9	11.6	1.9×10^{-6}*
8	11	16	123	592	3.5	1.6	7.8	2.8×10^{-3}*
9	7	9	123	592	3.9	1.4	10.7	1.1×10^{-2}
10	8	2	123	592	20.5	4.3	97.9	2.1×10^{-5}*
11	2	0	123	592	Inf	NA	Inf	3.0×10^{-2}
12	0	0	123	592	NA	NA	NA	1.0

Supplementary Table 5 Frequency of homozygous patients for SSNS vs. SRNS risk alleles: [a]P-value calculated using Fisher exact test. *Significance after Bonferroni correction with α= 0.05. SNP, single nucleotide polymorphism.

SNP (gene)	Risk Allele	#homozygous SSNS /total SSNS patients (frequency)	#homozygous SRNS /total SRNS patients (frequency)	Odds Ratio (95% CI)	P-value[a]
rs1129740	G	71/614	68/163	5.46	$<2.2x10^{-16}$*
(*HLA-DQA1)*		(0.12)	(0.42)	(3.6-8.3)	
rs9348883	A	7/599	18/171	9.9	$8.9x10^{-8}$*
(BTNL2)		(0.01)	(0.11)	(3.9-28.6)	
rs4642516	G	51/597	35/173	2.4	$4.7x10^{-4}$*
(HLA-DR/DQ)		(0.09)	(0.20)	(1.4-3.8)	
rs3134996	T	16/598	15/176	3.4	$1.5x10^{-3}$*
(HLA-DR/DQ)		(0.03)	(0.09)	(1.5-7.5)	
rs9273371	C	206/599	78/175	1.5	0.02
(intergenic)		(0.34)	(0.45)	(1.1-2.2)	
rs2637678	C	25/299	22/176	3.3	$2.0x10^{-4}$*
(CALHM6)		(0.04)	(0.125)	(1.7-6.2)	
rs56117924	A	3/599	0/176	0	1
(NPHS1/KIRREL)		(0.005)	(0)	(0-8.25)	
rs6478109	A	27/599	11/175	1.4 (0.6-3.0)	0.3
(TNFSF15)		(0.05)	(0.06)		
rs34213471	C	450/599	147/176	1.7	0.02
(TNFRSF11A)		(0.75)	(0.84)	(1.1-2.7)	

1.1 Supplementary Figures



Supplementary Figure 1 Risk loci burden for patients with SSNS vs. SRNS. Odds ratio for allele burden between SSNS vs. SRNS with ungrouped counts