Supplementary Information

LncRNA GAS5 and miR-137 polymorphisms and expression are associated with multiple sclerosis risk: mechanistic insights and potential clinical impact

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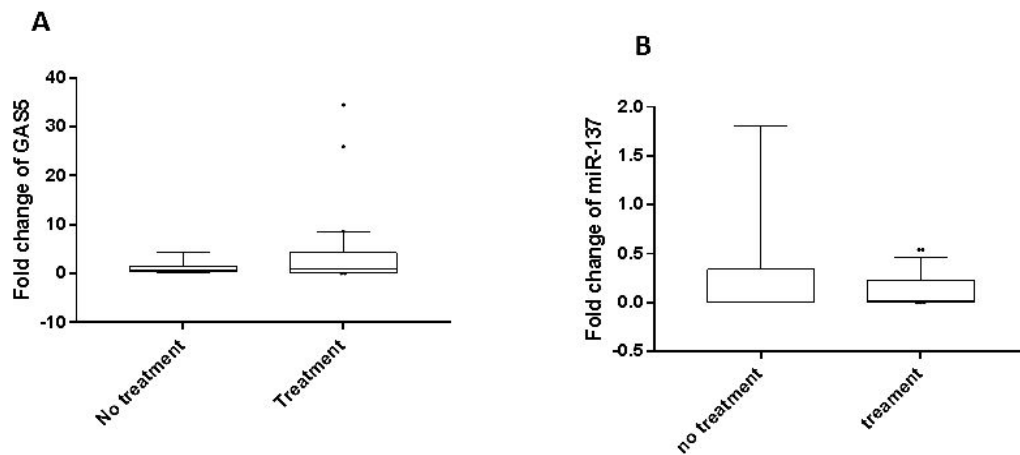
Figure S1. Effect of treatment on serum GAS5 and miR-137 expression levels in MS patients. The box represents the 25%-75% percentiles; the line inside the box represents the median and the upper and lower lines representing the 10%-90% percentiles of the fold change of serum GAS5 (A) and miR-137 (B) in patients receiving no treatment (n=15) or different treatment regimens at the time of blood collection (n=93). For GAS5, panel A *P*=0.86. For miR-137, panel B *P*=0.55. Data were compared by Mann Whiteny U test.

Table S1 Hardy-Weinberg equilibrium

	CC	CT	TT	C	T	*P* value
rs2067079						
Control	46	53	5	145	63	0.061
MS	52	40	16	144	72	0.086

	TT	GT	GG	T	G	*P* value
rs1625579						
Control	43	49	12	135	73	0.83
MS	62	39	7	163	53	0.8

Data are presented with numbers.

Table S2 Association of rs2067079 with MS type and EDSS score in MS patients

rs2067079 association with MS type						rs2067079 association with EDSS score					
Model	Geno-type	RRMS n=82	SPMS n=26	OR (95% CI)	P^a	Model	Geno-type	EDSS<3.5 n=51	EDSS≥3.5 n=57	OR (95% CI)	P^a
Codominant	C/C	36 (43.9%)	16 (61.5%)	1.00	0.3	Codominant	C/C	21 (41.2%)	31 (54.4%)	1.00	0.39
	C/T	33 (40.2%)	7 (26.9%)	0.48 (0.18-1.33)			C/T	21 (41.2%)	19 (33.3%)	0.63 (0.26-1.49)	
	T/T	13 (15.8%)	3 (11.5%)	0.51 (0.13-2.05)			T/T	9 (17.6%)	7 (12.3%)	0.50 (0.16-1.61)	
Dominant	C/C	36 (43.9%)	16 (61.5%)	1.00	0.12	Dominant	C/C	21 (41.2%)	31 (54.4%)	1.00	0.19
	C/T-T/T	46 (56.1%)	10 (38.5%)	0.49 (0.20-1.22)			C/T-T/T	30 (58.8%)	26 (45.6%)	0.59 (0.27-1.30)	
Recessive	C/C-C/T	69 (84.2%)	23 (88.5%)	1.00	0.55	Recessive	C/C-C/T	42 (82.3%)	50 (87.7%)	1.00	0.38
	T/T	13 (15.8%)	3 (11.5%)	0.67 (0.17-2.60)			T/T	9 (17.6%)	7 (12.3%)	0.61 (0.20-1.85)	
Overdominant	C/C-T/T	49 (59.8%)	19 (73.1%)	1.00	0.23	Overdominant	C/C-T/T	30 (58.8%)	38 (66.7%)	1.00	0.47
	C/T	33 (40.2%)	7 (26.9%)	0.56 (0.21-1.48)			C/T	21 (41.2%)	19 (33.3%)	0.74 (0.33-1.67)	
Log-additive	---	---	---	0.63 (0.33-1.23)	0.17	Log-additive	---	---	---	0.69 (0.40-1.19)	0.18
Alleles	C	105 (0.64)	39 (0.75)	0.59 (0.3-1.2)	0.17^b	Alleles	C	63 (0.62)	81 (0.71)	0.66 (0.38-1.18)	0.15^b
	T	59 (0.36)	13 (0.25)								

Values are expressed as number (percentage). EDSS, expanded disability status scale score; RRMS, relapsing remitting MS; SPMS, slowly progressive MS. $P<0.05$ is significantly different.
[a]adjusted with age and sex in logistig regression model
[b]crude value

Table S3 Association of rs1625579 with MS type and EDSS score in MS patients

rs1625579 association with MS type						rs1625579 association with EDSS score					
Model	Geno-type	RRMS n=82	SPMS n=26	OR (95% CI)	P^a	Model	Geno-type	EDSS<3.5 n=51	EDSS≥3.5 n=57	OR (95% CI)	P^a

Codominant	T/T	46 (56.1%)	16 (61.5%)	1.00		Codominant	T/T	28 (54.9%)	34 (59.6%)	1.00	
	G/T	32 (39%)	7 (26.9%)	0.61 (0.22-1.66)	0.36		G/T	21 (41.2%)	18 (31.6%)	0.57 (0.24-1.34)	0.32
	G/G	4 (4.9%)	3 (11.5%)	1.94 (0.37-10.02)			G/G	2 (3.9%)	5 (8.8%)	1.60 (0.26-9.75)	
Dominant	T/T	46 (56.1%)	16 (61.5%)	1.00	0.54	Dominant	T/T	28 (54.9%)	34 (59.6%)	1.00	0.31
	G/T-G/G	36 (43.9%)	10 (38.5%)	0.75 (0.30-1.89)			G/T-G/G	23 (45.1%)	23 (40.4%)	0.66 (0.29-1.49)	
Recessive	T/T-G/T	78 (95.1%)	23 (88.5%)	1.00	0.31	Recessive	T/T-G/T	49 (96.1%)	52 (91.2%)	1.00	0.43
	G/G	4 (4.9%)	3 (11.5%)	2.35 (0.47-11.66)			G/G	2 (3.9%)	5 (8.8%)	2.01 (0.34-11.72)	
Overdominant	T/T-G/G	50 (61%)	19 (73.1%)	1.00	0.23	Overdominant	T/T-G/G	30 (58.8%)	39 (68.4%)	1.00	0.15
	G/T	32 (39%)	7 (26.9%)	0.56 (0.21-1.49)			G/T	21 (41.2%)	18 (31.6%)	0.55 (0.24-1.26)	
Log-additive	---	---	---	0.98 (0.47-2.04)	0.96	Log-additive	---	---	---	0.84 (0.44-1.63)	0.61
Alleles	T	124 (0.76)	39 (0.75)	1.033 (0.52-2.06)	0.99[b]	Alleles	T	77 (0.75)	86 (0.75)	1.003 (0.55-1.86)	0.99[b]
	G	40 (0.24)	13 (0.25)				G	25 (0.25)	28 (0.25)		

Values are expressed as number (percentage). EDSS, expanded disability status scale score; RRMS, relapsing remitting MS; SPMS, slowly progressive MS. $P<0.05$ is significantly different.

[a]adjusted with age and sex in logistig regression model

[b]crude value

Table S4 Correlation of serum GAS5 and miR-137 with MS type and severity in MS patients

Parameter	Serum GAS5		Serum miR-137	
	r	p	r	p
MS type	0.135	0.25	0.105	0.41
EDSS	0.112	0.5	0.007	0.95

Correlation was conducted by Spearman correlation. *P*<0.05 is significantly different.