

Table S2. Predicted functional partners of proteins encoded by MS-GWAS genes differentially expressed between MS- and control IJV walls: association with neuronal/vascular traits/diseases.

Proteins (GWAS Genes)	Functional Partners *	Processes/Traits/Diseases	
		vascular	neuronal
CAMK2G	GluN2A (GRIN2A)	cerebral ischaemia [1]	synaptic plasticity, epilepsy and intellectual disability, brain volume in MS [2-3]
	GluN2B (GRIN2B)	proliferation and migration of arterial VSMC, PAH, ischemic vascular dementia [4-5]	brain development, multiple neurodevelopmental disorders, brain volume in AD [6]
IL20RA	IL20RB	serum sphingomyelin levels [7] (PLOS Genet 2008)	Neuroinflammation in EAE [8]
	IL-26	nr	CNS barrier regulation [9]
LEF-1	PITX2 #	atrial fibrillation, cerebral small-vessel disease [10]	axial development of mammalian brain [11]
Rev-ErbA- α (NR1D1)	PGC-1 α # (PPARGC1A)	heart development, angiogenesis, atherosclerosis [12-13]	ALS, PD, AD, decreased PPARGC1A mRNA in RR-MS, neuronal loss in MS cortex [14-15]
TEF	PER3 #	cardiac functions, development and progression of MI [16-17]	sleep disturbance in MS [18]

*When different, the name of the corresponding gene is reported in parentheses. # transcriptional regulator; GRIN2A=Glutamate receptor ionotropic, NMDA 2A (GluN2A protein); GRIN2B = glutamate ionotropic receptor NMDA 2B (GluN2B protein); PITX2 (gene) Pituitary homeobox 2 (protein); PPARGC1A= Peroxisome proliferator-activated receptor gamma coactivator 1-alpha (PPARGC-1-alpha protein).; PAH, pulmonary arterial hypertension; PD =Parkinson's disease; nr= not reported in literature. NR1D1 is also a functional partner of TEF.

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