

Table S1. Patients and healthy donors

		MS (n = 24)	HD (n = 24)
Demographic data	Age (median [range])	32 (24–57)	32 (24–67)
	Gender (male/female)	1:1.86	1:1.5
HLA-DR haplotype	HLA-DR2/DRx	12 (50%)	11 (46%)
	HLA-DR2/DR4	9 (38%)	9 (38%)
	HLA-DRx/DR2	3 (13%)	4 (17%)
Clinical characteristics	Disease duration in years from first clinical symptom (median [range])	2.5 (1–21)	N/A
	EDSS (median [range])	1.5 (0–6.5)	N/A

EDSS, expanded disability status score.

Table S2. IFN- γ responses to rVV constructs expressing EBV-encoded antigens before and after depletion of CD8⁺ T cells

	rVV-TK-	rVV-BZLF1	rVV-EBNA1	rVV-EBNA2	rVV-EBNA3A	rVV-EBNA3B	rVV-EBNA3C	rVV-LMP1	rVV-LMP2A	flu
PBMC (MS/HD)	23/23	110/98	45/26	21/20	66/56	79/91	147/139	45/37	62/45	194/208
CD8 ⁺ T cell-depleted PBMC (MS/HD)	17/17	45/56	47/29	27/20	30/28	35/32	74/65	34/38	49/38	53/72
x-fold reduction (MS/HD)	1.4/1.4	2.4/1.8	1.0/0.9	0.8/1.0	2.2/2.0	2.3/2.8	2.0/2.1	1.3/1.0	1.3/1.2	3.7/2.9

Responses were assessed by IFN- γ -specific ELISPOT assays and compared to an influenza A virus (A/Aichi/68; H3N2) infection. The table shows the number of IFN- γ spots in cell preparations derived from MS patients and healthy virus carriers, as well as the relative changes in the number of IFN- γ spots before and after CD8⁺ T cell depletion.

Lünemann et al. | <http://www.jem.org/cgi/content/full/jem.20072397/DC1>**Table S3A.** EBNA1 peptide library (aa 400-641), $n = 51$

Sequence	Length (aa)
PGRRPFFHPVGEADY	15
FFHPVGEADYFEYH	14
VGEADYFEYHQEGG	14
DYFEYHQEGGPDGEPDV	17
EGGPDGEPDVPPGAI	15
GEPDVPPGAIEQGPA	15
PPGAIEQGPADDPGEGPSTGPR	22
EQGPADDPGEGPSTGPR	17
PGEGPSTGPRGQGDGGR	17
GPRGQGDGGRRK	13
GQGDGGRKKGGWF	14
GRRKKGGWFGKHR	14
KKGGWFGKHRRGQGS	15
FGKHRRGQGSNPKF	14
RGQGSNPKFENIA	14
GSNPKFENIAEGLRA	15
FENIAEGLRALLAR	14
AEGLRALLARSHVER	15
ALLARSHVERTTDEGTW	17
VERTTDEGTWVAGVF	15
DEGTWVAGVIFY	12
GTWVAGVIFYGGSK	14
AGVIFYGGSKTSLY	14
VYGGSKTSLYNLRR	14
SKTSLYNLRRGTALA	15
NLRRGTALAIQPCR	14
GTALAIQCRLTPL	14
AIQQCRLTPLSRLPF	15
RLTPLSRLPFGMA	13
PLSRLPFGMAPGPG	14
LPFGMAPGPGPQGPL	16
PGPGPQGPLRESIV	15
PQGPLRESIVCYFM	15
LRESIVCYFMVFL	13
SIVCYFMVFLQTHIF	15
FMVFLQTHIFAEVLK	15
LGTHIFAEVLKDAIK	15
FAEVLKDAIKDLVM	14
LKDAIKDLVMTKPA	14
IKDLVMTKPAPTCNI	15

MTKPAPTCNIRVTV	14
APTCNIRVTVCSF	13
CNIRVTVCSFDDGV	14
VTVCSFDDGVDLPPW	15
FDDGVDLPPWFPPMV	15
DLPPWFPPMVEGAAA	15
FPPMVVEGAAAEGDDG	16
EGAAAEGDDGDDGDE	15
EGDDGDDGDEGGDGD	15
DDGDEGGDGDEGEEG	15
GGDGDEGEEGQE	12

Table S3B. HCMV-phosphoprotein 65 peptide library (aa 1–561), $n = 166$

Sequence	Length (aa)
MESRGRRCPemisVL	15
GRRCPemisVLGPI	14
CPemisVLGPISGHV	15
ISVLGPISGHVVKAV	15
GPISGHVVKAVFSR	14
SGHVVKAVFSRGDTPV	16
KAVFSRGDTPVLPH	14
FSRGDTPVLPHETRL	15
DTPVLPHETRL	12
TPVLPHETRL	15
PHETRL	15
RLLQTGIHVRV	12
LLQTGIHVRV	16
IHVRV	14
RVSQPSL	14
LILVSQYTPDSTPCH	15
SQYTPDSTPCHR	12
QYTPDSTPCHRG	12
YTPDSTPCHRGDNQL	15
STPCHRGDNQLQVQH	15
HRGDNLQVQHTYF	14
DNQLQVQHTYFTGSEV	16
VQHTYFTGSEVENV	14
TYFTGSEVENVSVNV	15
GSEVENVSVNVH	12
SEVENVSVNVHNPTGR	16
VSVNVHNPTGRSI	14
NVHNPTGRSICPSQ	15
PTGRSICPSQEPM	14
RSICPSQEPMSIYV	15
CPSQEPMSIYVYAL	14
SQEPMSIYVYALPLK	15
MSIYVYALPLKMLNI	15

VYALPLKMLNIPSI	14
LPLKMLNIPSINVHH	15
MLNIPSINVHHYPSA	15
PSINVHHYPSAAERK	15
VHHYPSAAERKHRHL	15
PSAAERKHRHLPVA	14
AERKHRHLPVADAVI	15
HRHLPVADAVIHA	14
LPVADAVIHASGK	14
ADAVIHASGKQMW	14
VIHASGKQMWQARL	15
ASGKQMWQARLTV	13
GKQMWQARLTVSGLA	15
WQARLTVSGLAWTR	14
RLTVSGLAWTRQQNQW	16
GLAWTRQQNQWK	12
LAWTRQQNQWKEPDV	15
RQQNQWKEPDVYY	13
QIQNQWKEPDVYYT	12
NQWKEPDVYYTSAFV	15
EPDVYYTSAFVFPTK	15
YYTSAFVFPTKDVAL	15
AFVFPTKDVALRHVV	15
PTKDVALRHVVCAH	15
VALRHVVC AHELV	14
RHVVC AHELVCSM	14
VCAHELVCSMENTR	15
HELVCSMENTRATKM	15
CSMENTRATKMQVI	14
ENTRATKMQVIGDQY	15
ATKMQVIGDQYVKVY	15
MQVIGDQYVKVYL	13
VIGDQYVKVYLESF	14
DQYVKVYLESFCEDEV	15
KVYLESFCEDEVPSGK	15
ESFCEDVPSGKLFMH	15
EDVPSGKLFMHVTL	14
PSGKLFMHVTLGSDV	15
LFMHVTLGSDV	12
FMHVTLGSDVEEDL	15
TLGSDVEEDLTMTR	15
DV EEDLTMTRNPQPF	16
TRNPQPFMRPHER	13
NPQPFMRPHERNGF	14
PFMRPHERNGFTVL	14
RPHERNGFTVLCPK	14

ERNGFTVLCPKNMII	15
CPKNMIIKPGKISHI	15
MIIKPGKISHIMLDV	15
PGKISHIMLDVAF	13
KISHIMLDVAFTSH	14
HIMLDVAFTSHEHF	14
LDVAFTSHEHFGLL	14
AFTSHEHFGLLCPK	14
SHEHFGLLCPKSI	14
HFGLLCPKSIPGL	14
LLCPKSIPGLSI	13
CPKSIPGLSISGNL	15
IPGLSISGNLLM	13
PGLSISGNLLMNGQQI	16
SGNLLMNGQQIFLEV	15
LMNGQQIFLEVQAIR	15
GQQIFLEVQAI RETV	15
FLEVQAI RETVELR	14
VQAI RETVELRQY	13
AI RETVELRQYDPVA	15
TVELRQYDPVAALFF	15
RQYDPVAALFFFDI	14
DPVAALFFFDIDLLL	15
ALFFFDIDLLLQR	13
FFFDIDLLLQRGPQY	15
IDLLLQRGPQYSEH	14
LLQRGPQYSEHPTF	14
RGPQYSEHPTFT	13
PQYSEHPTFTSQYR	15
EHPTFTSQYRIQ GK	15
FTSQYRIQ GKLEYR	15
SQYRIQ GKLEYRHTW	15
IQ GKLEYRHTWDRH	13
KLEYRHTWDRHDEGA	15
RHTWDRHDEGAA	12
HTWDRHDEGAAQGDDDV	17
DEGAAQGDDDVW	12
EGAAQGDDDVWTSGS	15
AQGDDDVWTSGSDSD	15
DDVWTSGSDSDEELV	15
TSGSDSDEELVTTER	15
DSDEELVTTERKTPR	15
ELVTTERKTPRV	12
LVTTERKTPRV TGGGA	16
RKTPRV TGGGAMAGA	15
RVTGGGAMAGAS	13

TGGGAMAGASTSA	14
GAMAGASTSAGRKR	15
GASTSAGRKRKSA	14
TSAGRKRKSASSA	14
AGRKRKSASSATA	13
RKRKSASSATACTSGV	16
ASSATACTSGVMTR	14
ATACTSGVMTRGRLK	15
TSGVMTRGRLKA	12
SGVMTRGRLKAESTV	15
TRGRLKAESTVA	12
RGRLKAESTVAPEED	15
KAESTVAPEEDTDED	15
TVAPEEDTDESDNEI	16
EDTDESDNEIHNP	15
EDSDNEIHNPVFTW	15
NEIHNPVFTWPPW	14
HNPAVFTWPPWQAGI	15
VFTWPPWQAGILAR	14
WPPWQAGILARNLV	14
WQAGILARNLVPMVA	15
ILARNLVPMVATV	13
ARNLVPMVATVQGQNL	16
PMVATVQGQNLKY	14
ATVQGQNLKYQEFF	15
GQNLKYQEFFWDA	14
LKYQEFFWDANDIY	15
QEFFWDANDIYRIF	15
FWDANDIYRIFAE	14
ANDIYRIFAELEGVW	15
YRIFAELEGVWQPAA	15
AELEGVWQPAAQPKR	15
GVWQPAAQPKRRRHR	15
PAAQPKRRRHRQDAL	15
PKRRRHRQDALPGPCI	16
HRQDALPGPCIA	12
RQDALPGPCIASTPK	15
LPGPCIASTPKKHRG	15

Table S3C. Proinsulin precursor protein peptide library (aa 1–110), $n = 30$

Sequence	Length (aa)
MALWMRLLPLLALLA	15
MRLPLLALLALW	13
LLPLLALLALWGPDP	16
ALLALWGPDPAAAFV	15
LWGPDPAAAFVNQHL	15
DPAAAFVNQHLCGSH	15

AFVNQHLCGSHLVEA	15
NQHLCGSHLVEALYL	15
CGSHLVEALYLV	12
GSHLVEALYLVCGER	15
VEALYLVCGERGFFY	15
YLVCGERGFFYTPK	15
GERGFFYTPKTRR	14
GFFYTPKTRREA	13
FYTPKTRREAEDL	14
TPKTRREAEDLQV	13
KTRREAEDLQVGQV	14
REAEDLQVGQVEL	13
AEDLQVGQVELGGGPGA	17
GQVELGGGPGAGSL	14
ELGGGPGAGSLQPLA	15
GPGAGSLQPLAL	12
PGAGSLQPLALEGSL	15
SLQPLALEGSLQKR	14
PLALEGSLQKRGIV	14
LEGSLQKRGIVEQCC	15
LQKRGIVEQCCTSI	14
RGIVEQCCTSICSLY	15
EQCCTSICSLYQL	13
CCTSICSLYQLENYCN	16

Table S3D. Myelin peptides, $n = 15$

Protein	Location	Sequence	aa
MBP	MBP ₁₃₋₃₂	KYLATASTMDHARHGFLPRH	20
	MBP ₈₃₋₉₉	ENPVVHFFKNIVTPRTP	17
	MBP ₁₁₁₋₁₂₉	LSRFSWGAEGQRPGFGYGG	19
	MBP ₁₃₁₋₁₅₅	ASDYKSAHKGLKGVDAQGTLISKIFK	25
	MBP ₁₄₆₋₁₇₀	AQGTLISKIFKLGGRDSRSGSPMARR	25
	PLP ₄₀₋₆₀	TGTEKLIETYFSKNYQDYEYL	21
PLP	PLP ₈₉₋₁₀₆	GFYTTGAVRQIFGDYKTT	18
	PLP ₁₃₉₋₁₅₄	HCLGKWLGHDPKDFVGI	16
	PLP ₁₇₈₋₁₉₇	NTWTTCQSIAFPSKTSASIG	20
	PLP ₁₉₀₋₂₀₈	SKTSASIGSLCADARMYGVLV	20
MOG	MOG ₁₋₂₀	GQFRVIGPRHPIRALVGDEV	20
	MOG ₁₁₋₃₀	PIRALVGDEVELPCRISPGK	20
	MOG ₃₅₋₅₅	MEVGWYRPPFSRVVHLYRNGK	21
CNP	CNP ₃₄₃₋₃₇₃	EVGELSRGKLYSLGNGRWMLTLAKNMEVRAI	31
	CNP ₃₅₆₋₃₈₈	GNGRWMLTLAKNMEVRAIFTGYYGKGPVPTQG	33