

eTable 1 FLAIR parameters of patients with largest lesion volume

Patient No.	Scanner, field strength	TR (s)	TE (s)	TI (s)	Flip angle (°)	Voxel size (mm)
1	Philips, Ingenia, 3T	7.0	0.110	2.30	90	0.53*0.53*7.0
2, 3	GE, Discovery MR750, 3T	8.5	0.147	2.10	111	0.47*0.47*8.0
4, 7, 9	Siemens, Verio, 3T	8.0	0.102	2.37	150	0.45*0.45*8.0
5	Siemens, Prisma, 3T	8.0	0.083	20.37	150	0.75*0.75*8.0
6	GE, Discovery MR750w, 3T	6.5	0.110	2.12	160	0.47*0.47*8.0
8	Siemens, Verio, 3T	6.6	0.094	2.14	150	0.43*0.43*7.2
10	GE, Signa HDxt, 3T	9.0	0.158	2.25	90	0.47*0.47*8.0

Abbreviations: TE = echo time; TI = inversion time; TR = repetition time.

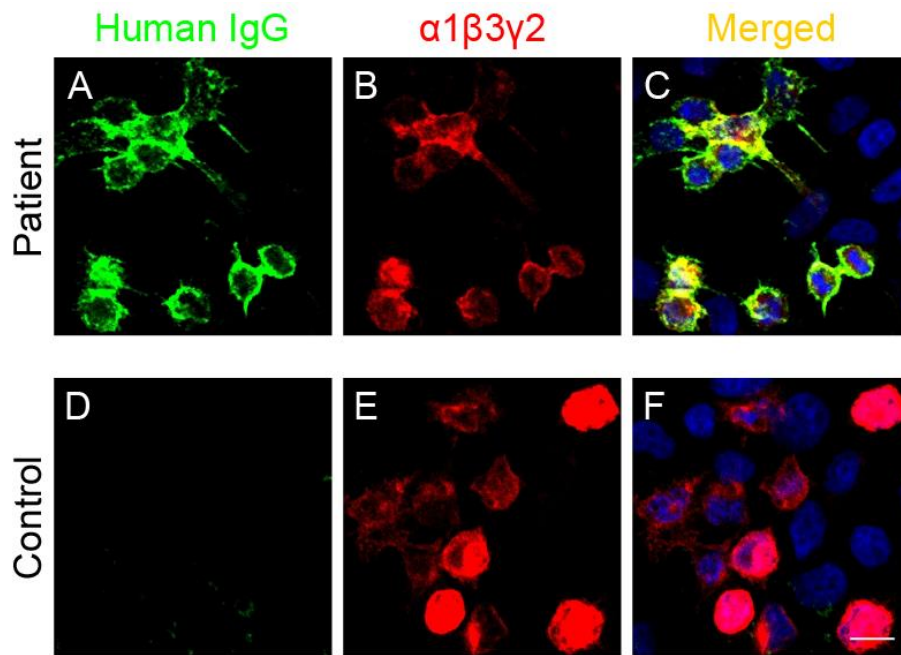
eTable 2 Lesion volumes on FLAIR scan at each time point

Patient No.	Lesion volume (cm ³); Interval from onset to MRI scan (days)			
	MRI-1 ^a	MRI-2 ^a	MRI-3 ^a	MRI-4 ^a
1	208.04; 8	270.57; 25	245.67; 50	no lesion; 1153
2 ^b	7.91; 9	40.32; 72	3.94; 103	no lesion; 1188
3	501.52; 44	416.7; 80	NA	NA
4	273.89; 30	197.5; 81	NA	NA
5	41.99; 2	175.85; 28	197.75; 70	140.16; 115
6	320.62; 28	NA	NA	NA
7	57.726; 23	NA	NA	NA
8	31.08; 7	32.35; 53	70.23; 175	NA
9	42.18; 7	101.42; 22	NA	NA
10	31.08; 53	62.89; 68	89.48; 120	NA

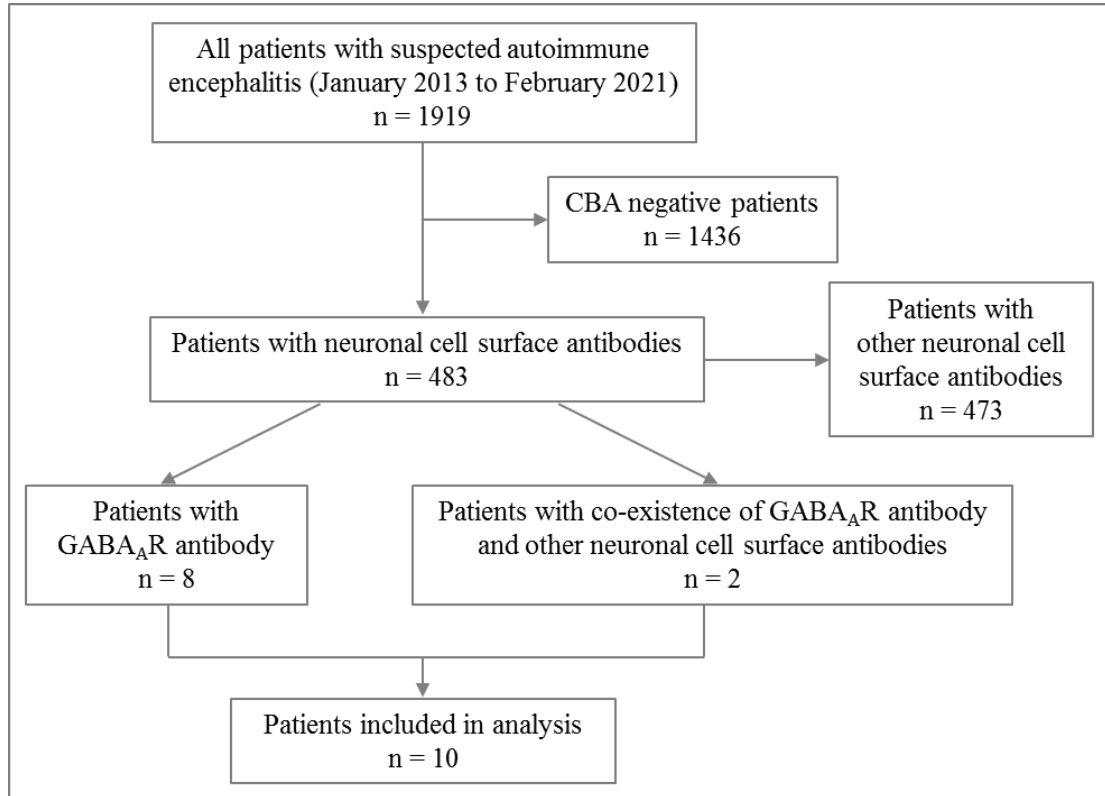
^aMRI-1, 2, 3, 4 denotes the first, second, third, fourth MRI scan of each patient.

^bPatient #2 had MRI data only during relapse, not at first onset.

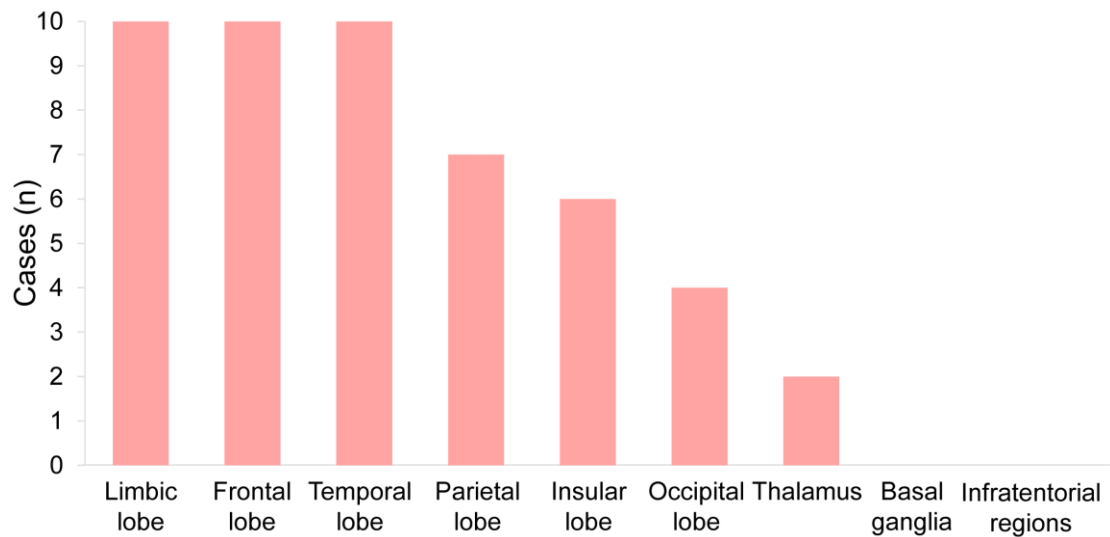
Abbreviations: NA = not available.



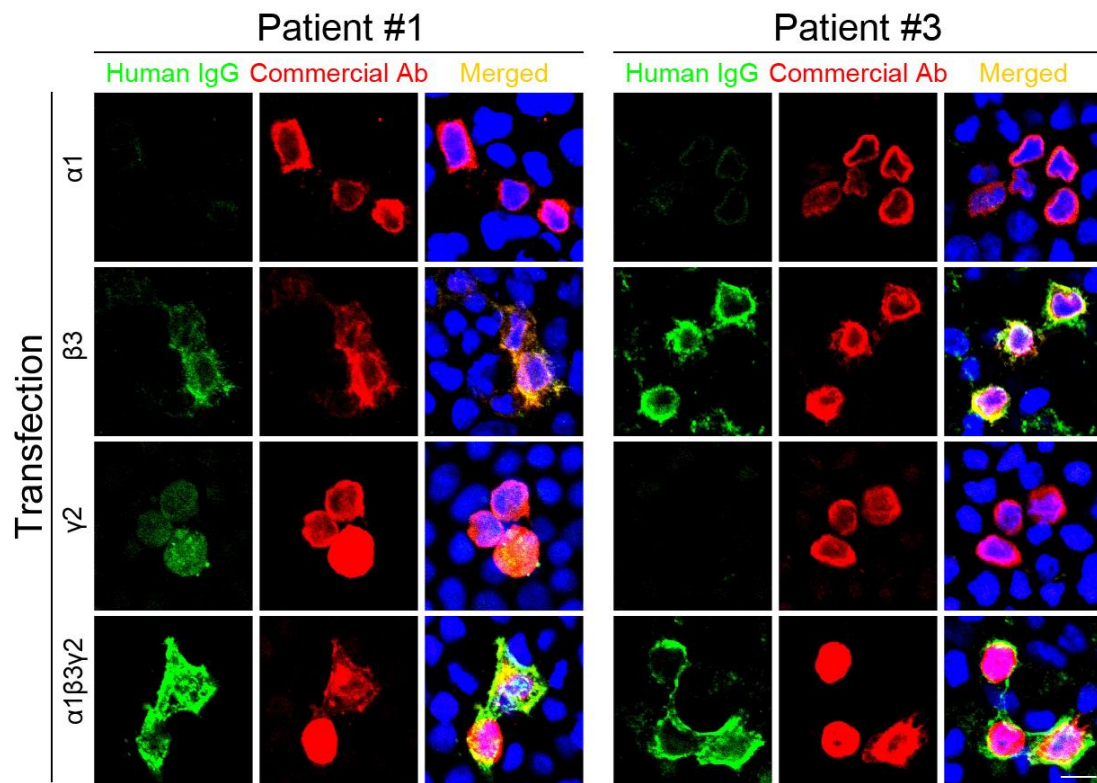
eFigure 1 Patient's serum contains autoantibodies that bind to γ -aminobutyric acid type A receptor (GABA_AR) by live cell-based assays (CBA). HEK293T cells co-expressing $\alpha 1$, $\beta 3$ and $\gamma 2$ subunits of GABA_AR tagged with mRuby (red, B) are labeled with autoantibodies from patient (green, A) and merged signals (yellow, C), indicating co-localization of autoantibodies and GABA_AR expressed on the surface of cells. Healthy control individual's serum has no reactivity using similar live CBA (D-F). The nuclei of the cells are labeled with 4',6-diamidino-2-phenylindole (blue). Scale bar = 10 μ m.



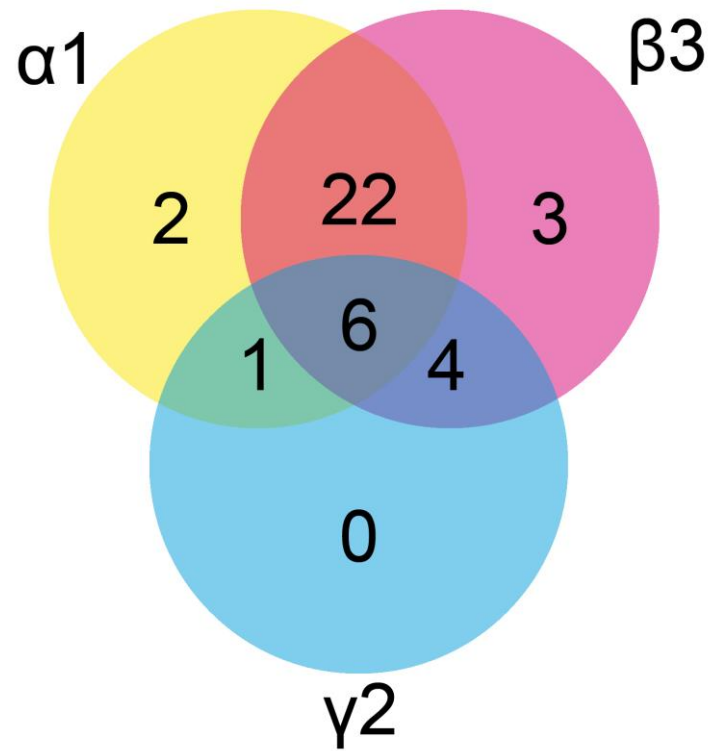
eFigure 2 Flow diagram of included patients for analysis. CBA = cell-based assays; GABA_AR = γ -aminobutyric acid type A receptor (GABA_AR).



eFigure 3 The number of patients with lesions in different brain regions. Nearly all patients' brain lesions in anti-GABA_AR encephalitis distributed in supratentorial regions. The most frequently involved brain regions were limbic, frontal and temporal lobes; but no lesion in infratentorial region (cerebellum and brainstem) was found. GABA_AR = γ -aminobutyric acid type A receptor (GABA_AR).



eFigure 4 Reactivity of autoantibodies from two representative cases (patient #1, 3) to $\alpha 1$, $\beta 3$ and $\gamma 2$ subunits of GABA_AR expressed individually or in combination ($\alpha 1\beta 3\gamma 2$) in HEK293T cells. Patients' autoantibodies were labeled with green fluorescence, commercial antibodies against $\alpha 1$, $\beta 3$ and $\gamma 2$ subunits were labeled with red fluorescence. Both patients had autoantibodies to $\alpha 1$ and $\beta 3$ subunits, patient #1 had autoantibodies to $\gamma 2$ subunit. Note that patients' autoantibodies strongly reacted to $\beta 3$ subunit, but only had weak reactivity to $\alpha 1$ subunit. The nuclei of the cells are labeled with 4',6-diamidino-2-phenylindole (blue). Scale bar = 10 μ m. Abbreviations: Ab = antibody.



eFigure 5 Distribution of autoantibody binding specificity to GABA_AR subunits in 38 patients with anti-GABA_AR encephalitis. Note that all patients had autoantibodies to $\alpha 1$ or $\beta 3$ subunit, and $\beta 3$ subunit was most frequently recognized by autoantibodies from patients.