

## Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: Spontaneous tonic-clonic seizure in an *Stxbp1*<sup>+/-</sup> mouse. Video length: 35 s.

File Name: Supplementary Movie 2

Description: Epileptic jump of an *Stxbp1*<sup>+/-</sup> mouse. Video length: 6 s.

File Name: Supplementary Movie 3

Description: Epileptic jump of an *Stxbp1*<sup>fl/+</sup> /Vgat mouse. Video length: 4 s.

File Name: Supplementary Movie 4

Description: Generalized tonic-clonic seizure in a mouse injected with NASPM in the CPu. Video length: 24 s [36 min after bilateral injection of NASPM (5 mM; 1.0  $\mu$ l) into a WT mouse].