

S1A Table. Quantitative features of firing patterns

<i>fsl</i>	First Spike Latency
<i>sfa</i>	Spike Frequency Adaptation
<i>ISI</i>	Inter-Spike Interval
<i>nISIs</i>	number of ISIs
<i>pss</i>	Post-Spike Silence
<i>n_bursts</i>	Number of bursts
<i>bw</i>	Burst Width
<i>pbi</i>	Post-Burst Interval
<i>b-nISIs</i>	nISIs within a Burst

S1B Table. Elements of firing patterns

D	Delayed
ASP	Adapting SPiking
NASP	Non-Adapting SPiking
RASP	Rapidly Adapting SPiking
TSTUT	Transient Stuttering
TSWB	Transient Slow Wave Bursting
PSTUT	Persistent Stuttering
PSWB	Persistent Slow Wave Bursting
SLN	SiLeNce
RBS	ReBoundSpiking

S1C Table. Other abbreviations

IM	Izhikevich Model
compact-MC	Compact Multi-Compartment model
morpho-MC	Morphologically detailed Multi-Compartment model
EA	Evolutionary Algorithm
SP	Stratum Pyramidale
SR	Stratum Radiatum
SLM	Stratum Lacunosum Moleculare
SO	Stratum Oriens
SG	Stratum Granulosum
SMi	Inner one-third of Stratum Moleculare
SMo	Outer one-third of Stratum Moleculare
H	Hilus