

S2 Table

Parameter	Description	Value		
$C_m$ ( $\mu F/cm^2$ )	Membrane capacitance	1		
$\eta$	Standard deviation of spontaneous background activity	0.4		
$V_{Na}$ (mV)	Na <sup>+</sup> reversal potential	50		
$V_K$ (mV)	K <sup>+</sup> reversal potential	-100		
$V_{Ca}$ (mV)	Ca <sup>2+</sup> reversal potential	120		
$V_{shp}$ (mV)		2.5		
$V_{th}$ (mV)	Threshold potential	25		
$k_d$				
$\alpha_{Ca}$		0.005		
$\tau_{Ca}$ ( $ms^{-1}$ )	Ca <sup>2+</sup> decay time constant	200		
$\alpha_s^{exc}$ ( $ms^{-1}$ )	Excitatory synaptic activation time constant	0.6		
$\alpha_s^{inh}$ ( $ms^{-1}$ )	Inhibitory synaptic activation time constant	0.5		
$\beta_s^{exc}$ ( $ms^{-1}$ )	Excitatory synaptic deactivation time constant	0.2		
$\beta_s^{inh}$ ( $ms^{-1}$ )	Inhibitory synaptic deactivation time constant	0.1		
$V_{syn}^{exc}$ (mV)	Excitatory synaptic reversal potential	0		
$V_{syn}^{inh}$ (mV)	Inhibitory synaptic reversal potential	-80		
<b>Cell-Type Specific Parameters</b>		<b>PYs &amp; SCs</b>	<b>MCs</b>	<b>BCs</b>
$g_{Na}$ ( $mS/cm^2$ )	Na <sup>+</sup> channel conductance	30	60	60
$g_K$ ( $mS/cm^2$ )	K <sup>+</sup> channel conductance	2.5	10	10
$g_L$ ( $mS/cm^2$ )	Leak channel conductance	0.6	0.4	0.4
$g_{Ca}$ ( $mS/cm^2$ )	Ca <sup>2+</sup> channel conductance	0.1	0.1	0
$g_{ahp}$ ( $mS/cm^2$ )	Slow Ca <sup>2+</sup> -dependent (after-hyperpolarization) K <sup>+</sup> channel conductance	0.5	0.75	0
$V_L$ (mV)	Leak channel reversal potential	-67	-65	-65

**Table 2. Model parameters for network simulations.** PY – pyramidal cell, SC – spiny stellate cell, MC – Martinotti cell, BC – basket cell.