**Table 2. Model predictions for L4–L2/3 connections synaptic parameters**

| | Cell 111200A | Cell 141200B | Cell 141200C | Average |
|---|---|---|---|---|
| **AMPA** | | | | |
| $g_{syn}$ **(nS)** | 0.22 | 0.1 | 0.48 | 0.26 |
| $\tau_1$ **(ms)** | 0.28 | 0.22 | 0.18 | 0.22 |
| $\tau_2$ **(ms)** | 1.38 | 1.37 | 0.32 | 1 |
| $t_{peak}$ **(ms)** | 0.56 | 0.48 | 0.24 | 0.43 |
| **NMDA** | | | | |
| $g_{syn}$ **(nS)** | 0.24 | 0.2 | 0.23 | 0.22 |
| $\tau_1$ **(ms)** | 0.56 | 0.15 | 0.16 | 0.29 |
| $\tau_2$ **(ms)** | 44.3 | 42 | 43.5 | 43 |
| $t_{peak}$ **(ms)** | 2.54 | 0.85 | 0.9 | 1.43 |

$g_{syn}$ is the maximal conductance for individual synaptic contact; $\tau_1$ and $\tau_2$ are the time constants that govern the double-exponent function describing the receptor's kinetics, and $t_{peak}$ is the time to peak of the synaptic conductance change. Equations used are given in *SI Text.*

Note that in two cells the time constant, $\tau_1$, for the rising phase of the AMPAR response is slightly longer than that of the NMDAR response. This seems to be in contrast to the notion that the AMPAR reacts faster than the NMDAR. However, as shown in Eq. **4**, the time-to-peak ($t_{peak}$) of the conductance change is determined by both $\tau_1$ and $\tau_2$. Indeed, the time to peak for the NMDA conductance in our model is by 1-2 ms longer than that for the AMPA conductance in the three modeled cells