

### ***Supplemental Figure Legends.***

#### **Figure 1. Ephrin receptors in glial cell cultures and responses to ephrinA in S100B mice.**

**A**, Primary astrocyte culture stained for anti-EphA4R. Most cultured astrocytes were labeled with the anti-EphA4 antibody (55 out of 63, 5 coverslips). Scale bar = 5  $\mu$ m.

**B**, PCR analysis of EphR expression in primary astrocyte cultures revealed the large number of EphRs they express.

**C**, UniGene numbers and reference sequences of the targeted genes for EphRs used in PCR experiments.

**D**, Glial cells in hippocampal slice cultures from mice expressing GFP under the control of the S100B promoter before and 30 min after ephrinA3-Fc application. As in rat astrocytes acutely transfected with GFP, these astrocytes responded to ephrinA3 with the extension of filopodial processes.

#### **Figure 2. Characteristics of slow inward currents in CA1 cells in hippocampal slice cultures.**

DHPG-evoked SICs recorded from CA1 pyramidal neurons in organotypic hippocampal slice cultures have slow and variable rise (**A**) and decay (**B**) times (bin = 20 msec), as well as large and variable amplitudes (**C**)(bin = 20 pA).

**D**, SIC frequency before and 15 min after application of D-AP5 (40  $\mu$ M)(n = 4 cells). SICs recorded under whole-cell voltage-clamp (-50 mV) in  $Mg^{2+}$ -free saline containing DNQX (40  $\mu$ M), TTX (1  $\mu$ M), bicuculline methobromide (40  $\mu$ M), CGP52432 (2  $\mu$ M), and DHPG (3  $\mu$ M).