# Supplementary information

Effects of single- and hybrid-frequency extremely low-frequency electromagnetic field stimulations on long-term potentiation in the hippocampal Schaffer collateral pathway

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In this paper, we used ELF-EMF magnetic stimulation drive to generate magnetic stimulation at eight different frequencies with an intensity of 1 mT. The magnetic induction intensity of brain slices was simulated by COMSOL Multiphysics 4.4 software(COMSOL Inc, Sweden) for each frequency of magnetic stimulation, and then tested by using milf-tesla device(HT108, Htmagnet, China).

Taking the 50 Hz magnetic stimulation result simulated by COMSOL software as an example, **FigS1.A** shows the simulation results of the strength of the coil and the perfusion chamber, while **FigS1.B** directly extracts the simulation results of the brain slice. The simulation results show that the magnetic induction intensity on the brain slice is uniform and 1 mT.

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**Figure S1** Simulation results of intensity distribution. (A) The magnetic induction intensity distribution around the perfusion chamber and coil. (B) The magnetic induction intensity distribution on the brain slice.