

1 **Supplementary figure 1. Fingerprinting analysis of the CSE and CPE.** Capsiate, capsaicin, luteolin,  
2 and lutein were detected in CSE (A) and CPE (B) using HPLC at a wavelength of 222 nm, and its  
3 retention time and quantification were displayed (C).

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5 **Supplementary figure 2. CSE and CPE comparative effects, as well as the effects of CSE on BDNF**  
6 **expression.** The CPE was assessed for cytotoxicity (A) and cell viability (B) using a WST-8 assay on  
7 glutamate-induced HT22 cells. The cytotoxicity (C) and cell viability (D) of both CSE and CPE were  
8 evaluated simultaneously. The protein expression of BDNF were determined by western blotting  
9 analysis (E) in absence of glutamate-induced conditions. Signal intensities were analyzed in proportion  
10 to  $\alpha$ -tubulin (F). # $p < 0.05$  and ## $p < 0.01$  compared with the vehicle-treated cells; \*\* $p < 0.01$  compared  
11 with the glutamate-treated cells.

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