

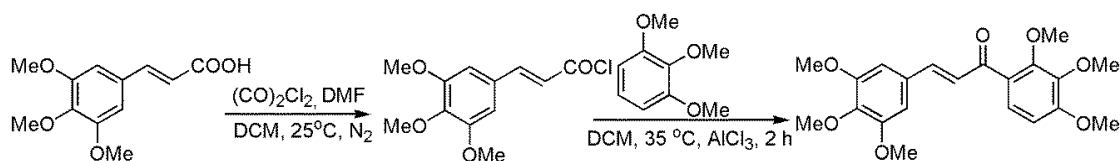
# Supplementary Materials: Chalcone-Derived Nrf2 Activator Protects Cognitive Function via Maintaining Neuronal Redox Status

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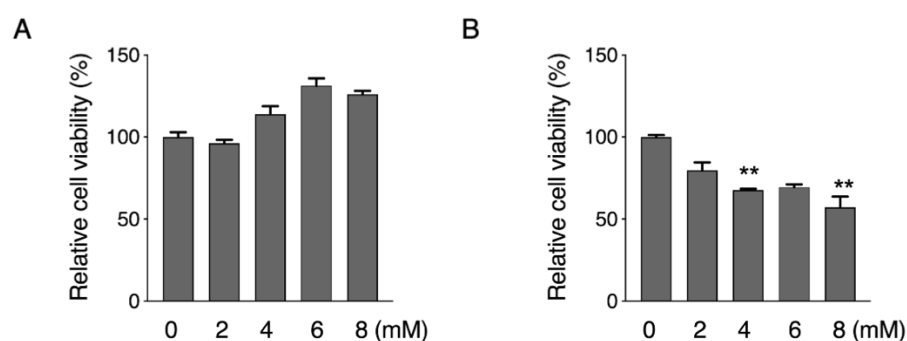
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**Table S1.** Detail primer information.

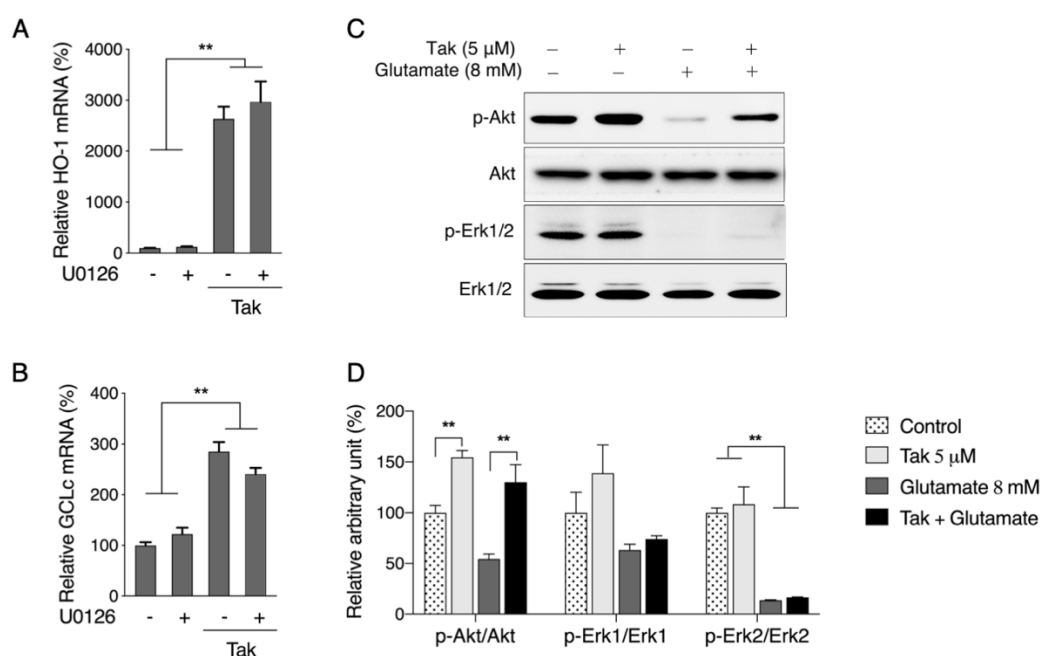
Species	Gene	Gene ID	Primer (5'-3')
Mouse	HO-1	15368	Forward: AAGCCGAGAATGCTGAGTTCA
			Reverse: GCCGTGTAGATATGGTACAAGGA
Mouse	Nqo-1	18104	Forward: AGGATGGGAGGTACTCGAATC
			Reverse: AGGCGTCCTTCCTTATATGCTA
Mouse	Gclc	14629	Forward: CTACCACGCAGTCAAGGACC
			Reverse: CCTCCATTCAAGTAACAAGTGGAC
Mouse	Gclm	14630	Forward: AGGAGCTTCGGGACTGTATCC
			Reverse: GGGACATGGTGCATTCCAAAA
Mouse	Catalase	12359	Forward: AGCGACCAGATGAAGCAGTG
			Reverse: TCCGCTCTCTGTCAAAGTGTG
Mouse	Sod1	20655	Forward: AACCAGTTGTGTTGTCAGGAC
			Reverse: CCACCATGTTTCTTAGAGTGAGG
Mouse	Sod2	20656	Forward: CAGACCTGCCTTACGACTATGG
			Reverse: CTCGGTGGCGTTGAGATTGTT
Mouse	β-Actin	11461	Forward: GGCTGTATTCCCCTCCATCG
			Reverse: CCAGTTGGTAACAATGCCATGT



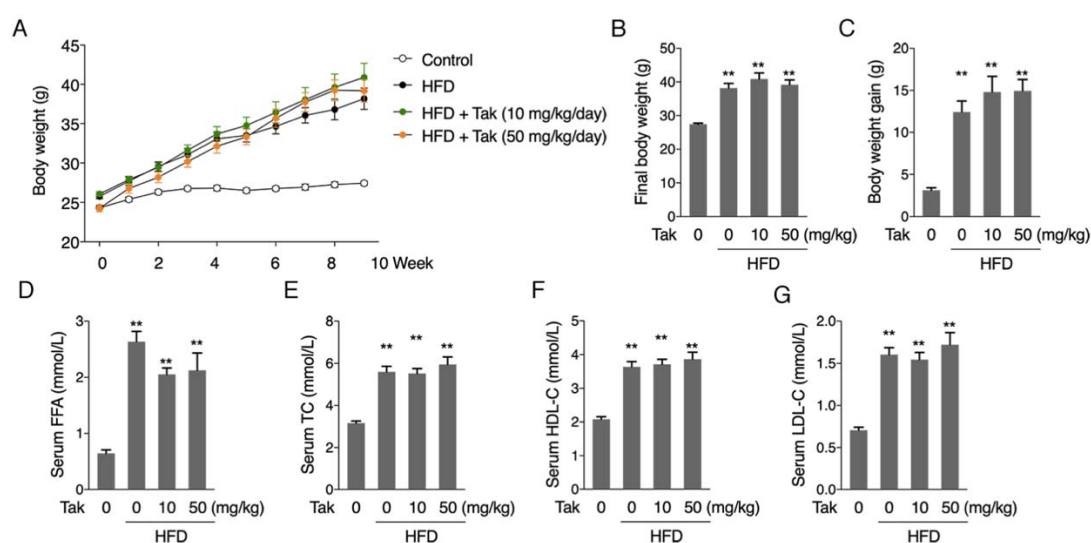
**Figure S1.** Synthetic scheme and structure of 1-(2,3,4-trimethoxyphenyl)-2-(3,4,5-trimethoxyphenyl)-acrylketone.



**Figure S2. The effect of glutamate on cell viability.** HT22 cells were treated with glutamate at 0, 2, 4, 6, 8  $\mu$ M for 6 (A) and 12 h (B), cell viability was analyzed by MTT.



**Figure S3. Tak activates phase II enzymes independent of Erk signaling.** HT22 cells were treated with Tak for 6 h with or without U0126, and the mRNA expression levels of HO-1 (A) and GCLC (B) were analyzed by qRT-PCR. HT22 cells were pre-treated with 5  $\mu$ M Tak for 24 h, followed by 8 mM glutamate challenge for 12 h, protein levels of p-Akt and p-Erk1/2 were analyzed by western blot analysis (C: representative images; D: densitometric analysis). The values are presented as the mean  $\pm$  S.E.M. from at least three independent experiments. \* $P < 0.05$  and \*\* $P < 0.01$  between the connected groups.



**Figure S4. The effects of Tak on obese mice.** Mice were fed a chow diet or HFD with or without Tak supplementation at doses of 10 and 50 mg/kg/day for 10 weeks, and the body weight was recorded and serum lipids were analyzed. (A) Body weight curve. (B) Final body weight. (C) Body weight gain. (D) Serum FFA. (E) Serum TC. (F) Serum HDL-c. (G) Serum LDL-c. The values are presented as the mean  $\pm$  S.E.M.,  $n = 8$ . \* $P < 0.05$  and \*\* $P < 0.01$  between the connected groups.