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**Product Data Sheet**

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Product Name: 2-(2-Phenylethyl)chromone

Cat. No.: GC19560

**Chemical Properties**

Cas. No. 61828-53-3

Formula C<sub>17</sub>H<sub>14</sub>O<sub>2</sub>

M.Wt 250.29

Solubility DMSO: ≥80mg/ml

Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Protocol****Cell experiment [1]:**

Cell lines GES-1

Preparation Method GES-1 cells were co-incubated with 1.5mM TCA and 5 or 10µg/mL 2-(2-phenylethyl)chromone for 24h, stained with an Annexin V-FITC kit, fixed, and then analyzed by FACS. The Q4 quadrant denotes early apoptosis, and the Q2 quadrant denotes late apoptosis.

Reaction Conditions 5 and 10µg/mL; 24h

Applications 2-(2-Phenylethyl)chromone significantly inhibits TCA-induced apoptosis in GES-1 cells by suppressing the PERK/eIF2α/CHOP pathway.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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### Animal experiment

[2]:

Animal models                      Male ICR mice

Preparation Method

Seventy mice were randomly divided into seven groups. The groups were as follows: normal control group, model group, OEC group (positive control), 2-(2-Phenylethyl)chromone group. The normal and model groups were orally administered 20mL/kg of distilled water. The OEC group was pretreated with 40mg/kg daily via oral gavage. The 2-(2-Phenylethyl)chromone was administered at 20 and 40mg/kg doses. After pretreatment for 7 days and 12h of food deprivation with water ad libitum, the other mice were used to develop an acute gastric ulcer model by administering absolute ethanol at a concentration of 0.15mL/10g via oral gavage. The normal group was excluded. Whole blood samples were collected from the orbit for serum analysis 1h after the administration of absolute ethanol, and the animals were then sacrificed via cervical dislocation. Their stomachs were immediately removed, fixed with a formaldehyde solution, and prepared for the determination of the gastric lesion index, histopathological sections, and immunohistochemical analysis.

Dosage form                              20 and 40mg/kg; 7 days; p.o.

Applications

2-(2-Phenylethyl)chromone reduced the gastric occurrence and ulcer inhibition rates by up to more than 70% in a dose-dependent manner.

References:

[1] Ma J, Huo H, Zhang H, Wang L, Meng Y, Jin F, Wang X, Zhao Y,

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Zhao Y, Tu P, Song Y,  
Zheng J, Li J. 2-(2-  
phenylethyl)chromone-  
enriched extract of the  
resinous heartwood of  
Chinese agarwood  
(*Aquilaria sinensis*)  
protects against  
taurocholic acid-  
induced gastric  
epithelial cells  
apoptosis through  
Perk/eIF2 $\alpha$ /CHOP  
pathway.

Phytomedicine. 2022  
Apr;98:153935.

[2] Wang C, Wu Y,  
Gong B, Mou J, Cheng  
X, Zhang L, Wei J.  
Agarwood Chromone  
Alleviates Gastric  
Ulcers by Inhibiting the  
NF- $\kappa$ B and Caspase  
Pathways Based on  
Network Pharmacology  
and Molecular  
Docking.  
Pharmaceuticals  
(Basel). 2025 Mar  
31;18(4):514.

### Background

2-(2-Phenylethyl)chromone is the main bioactive component of agarwood which showed diverse pharmaceutical activities, such as anti-inflammatory activity, anticancer activity,

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neuroprotective activity, antioxidant activity, acetylcholinesterase inhibition activity<sup>[1]</sup>.

In vitro, 2-(2-Phenylethyl)chromone (10, 50 and 100 μg/mL; 24h) inhibits oxLDL uptake of macrophages<sup>[2]</sup>. 2-(2-Phenylethyl)chromone (5 and 10 μg/mL; 24h) significantly inhibits TCA-induced apoptosis in GES-1 cells by suppressing the PERK/eIF2α/CHOP pathway<sup>[3]</sup>.

In vivo, 2-(2-Phenylethyl)chromone (50 and 100 mg/kg; 6 weeks; p.o.) effectively reduces the formation of aortic plaques in atherosclerotic ApoE mice<sup>[2]</sup>. 2-(2-Phenylethyl)chromone (20 and 40 mg/kg; 7 days; p.o.) reduced the gastric occurrence and ulcer inhibition rates by up to more than 70% in a dose-dependent manner<sup>[4]</sup>.

### References:

[1] Wang Y, Huang W, Tian W, Mo T, Yan Y, Cui X, Liu X. Enzymatic biosynthesis of novel 2-(2-phenylethyl)chromone glycosides catalyzed by UDP-glycosyltransferase UGT71BD1. *Biochem Biophys Res Commun*. 2023 Sep 3;671:80-86.

[2] Ma J, Wang L, Zhao Y, Gao Y, Yin Z, Zhao M, Zhao Y, Pang X, Wang J, Xue W, Tu P, Li J, Zheng J. 2-(2-Phenylethyl)chromone-enriched extract of Chinese agarwood (*Aquilaria sinensis*) inhibits atherosclerosis progression through endoplasmic reticulum stress-mediated CD36 expression in macrophages. *J Ethnopharmacol*. 2024 Feb 10;320:117411.

[3] Ma J, Huo H, Zhang H, Wang L, Meng Y, Jin F, Wang X, Zhao Y, Zhao Y, Tu P, Song Y, Zheng J, Li J. 2-(2-phenylethyl)chromone-enriched extract of the resinous heartwood of Chinese agarwood (*Aquilaria sinensis*) protects against taurocholic acid-induced gastric epithelial cells apoptosis through Perk/eIF2α/CHOP pathway. *Phytomedicine*. 2022 Apr;98:153935.

[4] Wang C, Wu Y, Gong B, Mou J, Cheng X, Zhang L, Wei J. Agarwood Chromone Alleviates Gastric Ulcers by Inhibiting the NF-κB and Caspase Pathways Based on Network Pharmacology and Molecular Docking. *Pharmaceuticals (Basel)*. 2025 Mar 31;18(4):514.

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