

## Product Data Sheet

Product Name: Chrysoeriol

Cat. No.: GC60109

### Chemical Properties

Cas. No. 491-71-4

SMILES O=C1C=C(C2=CC=C(O)C(OC)=C2)OC3=CC(O)=CC(O)=C13

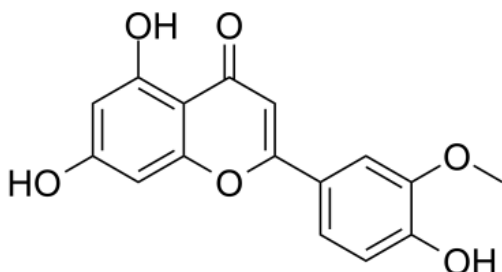
Formula  $C_{16}H_{12}O_6$  M.Wt 300.26

Solubility DMSO : 100 mg/mL (333.04 mM; Need ultrasonic) Storage Store at 2-8°C, protect from light

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 SH-SY5Y cells

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

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SH-SY5Y cells were pre-treated with different doses of Chrysoeriol for 4h  
Preparation Method followed by 1mM MPP<sup>+</sup> for 24h, and then subjected to MTT assay for cell viability measurement.

Reaction  
Conditions 5, 10, and 20μM; 4h

Applications MPP<sup>+</sup>-reduced cell viability was partially but significantly attenuated by the treatment of cells with Chrysoeriol in a concentration-dependent manner.  
Chrysoeriol at the concentration of 20μM significantly reduced the MPP<sup>+</sup>-induced cell death, and improved the percentage of survival cells from 50% to 90%.

### Animal experiment [2]:

Animal models STZ-induced diabetic rats

Preparation Method STZ-induced diabetic rats (plasma glucose > 255mg/dl) were orally administered Chrysoeriol (20mg/kg) for 45 days, then serum ALT and AST levels were measured using the Reitman and Frankel method.

Dosage form 20mg/kg; 45 days; p.o.

Applications Treatment with Chrysoeriol significantly reduced elevated ALT and AST levels in serum, restoring them to near-normal levels.

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### References:

- [1] LIMBOONREUNG T, TUCHINDA P, CHONGTHAMMAKUN S. Chrysoeriol mediates mitochondrial protection via PI3K/Akt pathway in MPP<sup>+</sup> treated SH-SY5Y cells[J]. Neuroscience Letters, 2020, 714: 134545.
- [2] KRISHNAN B, PUGALENDI K V, SARAVANAN R. Ameliorative potential of Chrysoeriol, a bioactive flavonoid on oxidative stress and hepatic marker enzymes in STZ induced diabetic rats[J]. Asian Journal of Pharmacy and Pharmacology, 2019, 5(3): 614-624.

### Background

Chrysoeriol is a natural flavonoid found in *Coronopus didymus* that exerts anti-inflammatory effects by inhibiting the JAK2/STAT3 and NF- $\kappa$ B signaling pathways<sup>[1,2]</sup>. Chrysoeriol possesses potent antioxidant, anti-inflammatory, and anticancer activities and is commonly used in the treatment and research of acute skin inflammation, diabetes, and cardiovascular diseases<sup>[3,4]</sup>.

In vitro, SH-SY5Y cells were pretreated with Chrysoeriol (5, 10, and 20 $\mu$ M) for 4h, followed by co-incubation with 1mM 1-methyl-4-phenylpyridinium iodide (MPP<sup>+</sup>) for an additional 24h. Chrysoeriol dose-dependently attenuated MPP<sup>+</sup>-induced cell death, with 20 $\mu$ M Chrysoeriol significantly increasing cell survival from 50% to approximately 90%<sup>[5]</sup>. ARPE-19 cells were pretreated with Chrysoeriol (2.5 and 5 $\mu$ M) for 2h, followed by co-incubation with H<sub>2</sub>O<sub>2</sub> (500 $\mu$ M) for an additional 24h. Chrysoeriol pretreatment significantly upregulated the mRNA expression of the mitochondrial transcription factor TFAM and the DNA polymerase subunit gamma-1 (POLG)<sup>[6]</sup>.

In vivo, Chrysoeriol (20mg/kg) was orally administered to streptozotocin (STZ)-induced diabetic rats for 45 days, which significantly reduced the elevated serum levels of alanine aminotransferase (ALT) and aspartate aminotransferase (AST), bringing them back to near-normal levels<sup>[7]</sup>.

### References:

- [1] PRABHAKAR K R, SRINIVASAN K K, RAO P G M. Chemical investigation, anti-inflammatory and wound healing properties of *Coronopus didymus*[J]. Pharmaceutical Biology, 2002, 40(7): 490-493.
- [2] WU J Y, CHEN Y J, BAI L, et al. Chrysoeriol ameliorates TPA-induced acute skin inflammation in mice and inhibits NF- $\kappa$ B and STAT3 pathways[J]. Phytomedicine, 2020, 68: 153173.

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- [3] ABOULAGHRAS S, SAHIB N, BAKRIM S, et al. Health benefits and pharmacological aspects of chrysoeriol[J]. Pharmaceuticals, 2022, 15(8): 973.
- [4] CHA B Y, SHI W L, YONEZAWA T, et al. An inhibitory effect of chrysoeriol on platelet-derived growth factor (PDGF)-induced proliferation and PDGF receptor signaling in human aortic smooth muscle cells[J]. Journal of Pharmacological Sciences, 2009, 110(1): 105-110.
- [5] LIMBOONREUNG T, TUCHINDA P, CHONGTHAMMAKUN S. Chrysoeriol mediates mitochondrial protection via PI3K/Akt pathway in MPP<sup>+</sup> treated SH-SY5Y cells[J]. Neuroscience Letters, 2020, 714: 134545.
- [6] KIM M H, KWON S Y, WOO S Y, et al. Antioxidative effects of chrysoeriol via activation of the Nrf2 signaling pathway and modulation of mitochondrial function[J]. Molecules, 2021, 26(2): 313.
- [7] KRISHNAN B, PUGALENDI K V, SARAVANAN R. Ameliorative potential of Chrysoeriol, a bioactive flavonoid on oxidative stress and hepatic marker enzymes in STZ induced diabetic rats[J]. Asian Journal of Pharmacy and Pharmacology, 2019, 5(3): 614-624.

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