Tangeretin

Cat. No.: HY-N0133

CAS No.: 481-53-8

Molecular Formula: $C_{20}H_{20}O_7$

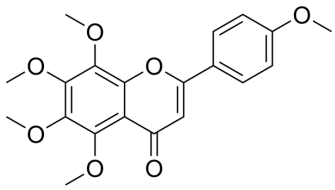
Molecular Weight: 372.37

Target: Notch; Apoptosis

Pathway: Neuronal Signaling; Stem Cell/Wnt; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	1 year
	-20°C	6 months



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (67.14 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.6855 mL	13.4275 mL	26.8550 mL
5 mM	0.5371 mL	2.6855 mL	5.3710 mL
10 mM	0.2686 mL	1.3428 mL	2.6855 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.71 mM); Clear solution
2. Add each solvent one by one: 0.5% CMC-Na/saline water
   Solubility: 1 mg/mL (2.69 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Tangeretin (Tangeritin), a flavonoid from citrus fruit peels, has been proven to play an important role in anti-inflammatory responses and neuroprotective effects in several disease models, and is a Notch-1 inhibitor.

IC_{50} & Target

Notch-1

In Vitro

Tangeretin enhanced the radiosensitivity of GC cells as demonstrated by MTT and colony formation assays. Tangeretin also attenuated radiation-induced EMT, invasion and migration in GC cells, accompanied by a decrease in Notch-1, Jagged1/2, Hey-1 and Hes-1 expressions. Tangeretin triggered the upregulation of miR-410, a tumor-suppressive microRNA. Furthermore, re-expression of miR-410 prevented radiation-induced EMT and cell invasion[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	In this study, we investigated the in vivo anti-RSV activity of tangeretin in 3-week-old male BALB/c mice. A plaque reduction assay and fluorescence quantitative polymerase chain reaction (FQ-PCR) showed that tangeretin inhibited RSV replication in the lung of mice[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay	The effect of tangeretin on RAW264.7 cells was determined using a MTT assay as previously reported.(13) Briefly, RAW264.7 cells (1 × 104 cells/well) were seeded in a 96-well plate for 24 h and treated with different concentrations of tangeretin (6.3–50.0 μM) and dimethyl sulfoxide (DMSO) (vehicle control, 0.01 and 0.1%) for 10 or 48 h. The absorbance was measured at 570 nm using an enzyme immunoassay (EIA) reader (Thermo Scientific, Waltham, MA), and cell viability (%) was calculated as follows: [(absorbance of the test group – absorbance of the blank control)/(absorbance of the control group – absorbance of the blank control)] × 100. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration	Animal administration [2] The mice were maintained in an air-conditioned, pathogen-free room (temperature of 24 ± 2 °C, with a 12 h light/dark cycle from 6:00 am to 6:00 pm) with free access to food and water. Mice were randomly divided into five groups (n = 10) as follows: normal (control), RSV-challenged, and three treatment groups administered 25, 50, or 100 mg/kg/day tangeretin dissolved in saline. The control and RSV-challenged groups received equal volumes of saline. During the experiment, mice in the treatment groups were intragastrically administrated tangeretin for 3 days consecutively before RSV stimulation. Mice were lightly anesthetized with diethyl ether and intranasally challenged with RSV Long strain [6.7 × 106 plaque-forming units (PFU)] on day 4 after tangeretin treatment, while the control group was sham-infected with an equal volume of HEp-2 cell lysate, which was centrifuged under the same conditions as the viral suspensions. The mice were weighed during the experiment and sacrificed on day 5 post-infection after anesthetizing them with chloral hydrate (Figure 1B). The lung tissues were removed and weighed, and the lung index was calculated using the following formula: lung index = lung weight/body weight. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Phytomedicine. 2023 Jun 16, 154928.
- Phytomedicine. 5 January 2022, 153928.
- Biomed Pharmacother. 2020 Sep;129:110369.
- J Agric Food Chem. 2022 Sep 5.
- J Agric Food Chem. 2022 Feb 9;70(5):1536-1546.

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REFERENCES

[1]. Zhang X, et al. Tangeretin enhances radiosensitivity and inhibits the radiation-induced epithelial-mesenchymal transition of gastric cancer cells. Oncol Rep. 2015 Jul;34(1):302-10.

[2]. Xu JJ, et al. Tangeretin from Citrus reticulate Inhibits Respiratory Syncytial Virus Replication and Associated Inflammation in Vivo. J Agric Food Chem. 2015 Nov 4;63(43):9520-7.

[3]. Hagenlocher Y, et al. Citrus peel polymethoxyflavones nobiletin and tangeretin suppress LPS- and IgE-mediated activation of human intestinal mast cells. Eur J Nutr. 2017 Jun;56(4):1609-1620.

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

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