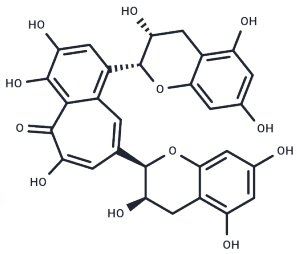
Data Sheet (Cat.No.T7602)

TargetMol

Theaflavin

Chemical Properties



CAS No. : 4670-05-7

Formula: C29H24O12

Molecular Weight: 564.49

Storage: Store at low temperature,Keep away from direct sunlight,Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Theaflavin is a polyphenolic flavonoid that has been found in black tea and has diverse biological activities, including antioxidant, anticancer, anti-inflammatory, and antiviral properties
Targets(IC50)	Endogenous Metabolite,Influenza Virus
In vitro	Theaflavin inhibits the growth of OVCAR-3 and A2780/CP70 human ovarian cancer cell lines, but not the ovarian epithelial cell line IOSE 364 (IC50s = 11.9, 38.5, and >40 μM, respectively)[1].
In vivo	In the pretreated ICH rats Theaflavin significantly alleviated the behavioral defects, protected BBB integrity, and decreased the formation of cerebral edema and the levels of ROS as well as inflammatory cytokines (including interleukin-1 beta [IL-1β], IL-18, tumor nectosis factor-alpha, interferon-γ, transforming growth factor beta, and (C-X-C motif) ligand 1 [CXCL1]).Nissl staining and TUNEL displayed Theaflavin could protect against the neuron loss and apoptosis via inhibiting the activation of nuclear transcription factor kappa-β-p65 (NF-κβ-p65), caspase-1, and IL-1β[2].
Cell Research	Cell proliferation assay, Hoechst 33342 staining assay, Caspase-Glo Assay, western blot, human umbilical vein endothelial cell tube formation assay and vascular endothelial growth factor (VEGF) enzyme-linked immunosorbent assay were performed[1].
Animal Research	ICH rat models were induced with type VII collagenase and pretreated with TF by gavage in different doses (25 mg/kg-100 mg/kg).?Twenty-four hours after ICH attack, evaluated the rats' behavioral performance, the blood-brain barrier (BBB) integrity, and the formation of cerebral edema.?The levels of reactive oxygen species (ROS) and inflammatory cytokines were examined by 2',7'-dichlorofluorescin diacetate and enzyme-linked immunosorbent assay.?Nissl staining and transferase dUTP nick end labeling (TUNEL) were aimed to detect the neuron loss and apoptosis, the mechanism of which was explored by Western blot[2].

Solubility Information

Solubility	DMSO: 42.5 mg/mL (75.29 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 1 mg/mL (1.77 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7715 mL	8.8576 mL	17.7151 mL
5 mM	0.3543 mL	1.7715 mL	3.543 mL
10 mM	0.1772 mL	0.8858 mL	1.7715 mL
50 mM	0.0354 mL	0.1772 mL	0.3543 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Gao Y , Rankin G O , Youying T U , et al. Inhibitory Effects of the Four Main Theaflavin Derivatives Found in Black Tea on Ovarian Cancer Cells[J]. Anticancer research, 2016, 36(2):643-651.

Juárez-Mercado K E, Prieto-Martínez F D, Sánchez-Cruz N, et al. Expanding the Structural Diversity of DNA Methyltransferase Inhibitors. Pharmaceuticals. 2021, 14(1): 17.

Yang X, Liu L, Hao Y, et al. A Bioluminescent Biosensor for Quantifying the Interaction of SARS-CoV-2 and Its Receptor ACE2 in Cells and In Vitro. Viruses. 2021, 13(6): 1055.

Guanglei F , Hua W , Youli C , et al. Theaflavin alleviates inflammatory response and brain injury induced by cerebral hemorrhage via inhibiting the nuclear transcription factor kappa β-related pathway in rats[J]. Drug Design, Development and Therapy, 2018, Volume 12:1609-1619.

Juarez-Mercado K E, Prieto-Martinez F D, Sanchez-Cruz N, et al. DNA Methyltransferase Inhibitors with Novel Chemical Scaffolds[J]. bioRxiv. 2020

Juárez-Mercado K E, Prieto-Martínez F D, Sánchez-Cruz N, et al. Expanding the Structural Diversity of DNA Methyltransferase Inhibitors[J]. Pharmaceuticals. 2021, 14(1): 17.