Piceatannol

Cat. No.: HY-13518

CAS No.: 10083-24-6

Molecular Formula: $C_{14}H_{12}O_4$

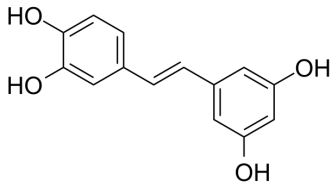
Molecular Weight: 244.24

Target: Syk; Autophagy; Apoptosis

Pathway: Protein Tyrosine Kinase/RTK; Autophagy; Apoptosis

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 31 mg/mL (126.92 mM)

H_2O : 1 mg/mL (4.09 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.0943 mL	20.4717 mL	40.9433 mL
5 mM	0.8189 mL	4.0943 mL	8.1887 mL
10 mM	0.4094 mL	2.0472 mL	4.0943 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (10.24 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.24 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Piceatannol is a well-known Syk inhibitor and reduces the expression of iNOS induced by TNF. Piceatannol is an effective agent for research of acute lung injury (ALI)[1]. Piceatannol is a naturally occurring polyphenolic stilbene found in various fruits and vegetables and exhibits anticancer and anti-inflammatory properties[2]. Piceatannol induces apoptosis in DLBCL cell lines[3]. Piceatannol induces autophagy and apoptosis in MOLT-4 human leukemia cells[4].

In Vitro

Piceatannol is a resveratrol metabolite[2].

SYK inhibitor Piceatannol (3.125, 6.25, 12.5, 25, and 50 μM; 72 hours) inhibits cell growth of six diffuse large B cell lymphomas (DLBCL) cell lines (SUDHL-6, U2392,DOHH2,Karpas 422, VAL, OCI Ly19) with IC_{50}s of 18 μM, 25 μM, 37 μM, 48 μM, >50 μM and

>50 μM, respectively[3].

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

Cell Cytotoxicity Assay[3]

Cell Line:	Six DLBCL cell lines (Karpas 422, VAL, SUDHL-6, OCI Ly19, U2392 and DOHH2)
Concentration:	3.125, 6.25, 12.5, 25, and 50 μM
Incubation Time:	72 hours
Result:	The IC_{50}s were 18 μM in SUDHL-6, 25 μM in U2392, 37 mM in DOHH2, 48 μM in Karpas 422 and higher than 50 μM in OCI-Ly19 and in VAL.

In Vivo

Piceatannol (10, 20, and 40 mg/kg) inhibits the pulmonary edema and reduces the infiltration of inflammatory cells induced by lipopolysaccharide[1].

Piceatannol (10, 20, and 40 mg/kg) alleviates the myeloperoxidase activity and inhibits the production of iNOS and COX-2 expressions in lung tissuesinduced by lipopolysaccharide[1].

Piceatannol (10, 20, and 40 mg/kg; intraperitoneally 1 h) treatment alleviates inflammatory response by inhibiting the activation of TLR/NF-κB signaling pathway in lung tissues during acute lung injury (ALI) induced by LPS[1].

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

Animal Model:	Male C57BL/6 mice (40-50 g)[1]
Dosage:	10, 20, and 40 mg/kg
Administration:	Intraperitoneally 1 h before LPS challenge
Result:	Significantly reduced the pulmonary edema induced by LPS.

CUSTOMER VALIDATION

- Cell. 2018 Oct 4;175(2):442-457.e23.
- Nat Commun. 2020 Sep 21;11(1):4765.
- Pharmacol Res. 2020 May;155:104751.
- J Agric Food Chem. 2017 Jun 7;65(22):4384-4394.
- Mol Immunol. 2022 Mar;143:105-113.

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REFERENCES

[1]. Lu-Yuan Peng,et al. Protective Effect of Piceatannol Against Acute Lung Injury Through Protecting the Integrity of Air-Blood Barrier and Modulating the TLR4/NF-κB Signaling Pathway Activation. Front Pharmacol. 2020 Jan 22;10:1613.

[2]. Jonathan Kershaw, et al. The Therapeutic Potential of Piceatannol, a Natural Stilbene, in Metabolic Diseases: A Review. J Med Food. 2017 May;20(5):427-438.

[3]. Andrea Rinaldi, et al. In vitro efficacy of tyrosine kinase inhibitors: SYK and BCR-ABL inhibitors in lymphomas.Hematol Oncol. 2011 Sep;29(3):164-6.

[4]. Kamila Siedlecka-Kroplewska, et al. Induction of autophagy, apoptosis and aquisition of resistance in response to piceatannol toxicity in MOLT-4 human leukemia cells. Toxicol In Vitro. 2019 Sep;59:12-25.

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

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com