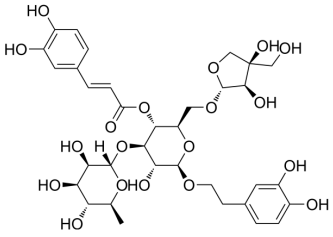
Forsythoside B

Cat. No.:	HY-N0029
CAS No.:	81525-13-5
Molecular Formula:	$C_{34}H_{44}O_{19}$
Molecular Weight:	756.7
Target:	TNF Receptor; NF-κB
Pathway:	Apoptosis; NF-κB
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 : 125 mg/mL (165.19 mM; Need ultrasonic)
H_2O : 110 mg/mL (145.37 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.3215 mL	6.6076 mL	13.2153 mL
5 mM	0.2643 mL	1.3215 mL	2.6431 mL
10 mM	0.1322 mL	0.6608 mL	1.3215 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (132.15 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (2.75 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (2.75 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (2.75 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Forsythoside B is a phenylethanoid glycoside isolated from Forsythia suspensa (Thunb.) Vahl, a Chinese folk medicinal plant for treating inflammatory diseases and promoting blood circulation. Forsythoside B could inhibit TNF-alpha, IL-6, IκB and modulate NF-κB.

IC_{50} & Target	NF-κB
In Vitro	Forsythoside B concentration-dependently down-regulates the levels of TNF-α, IL-6 and high-mobility group-box 1 protein (HMGB1) in lipopolysaccharide (LPS)-stimulated RAW264.7 cells, inhibits the IκB kinase (IKK) pathway and modulated nuclear factor (NF)- κB[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Intravenous injection of Forsythoside B (HY-N0029) alone or plus Imipenem (HY-B1369A) reduces serum levels of TNF-α, IL-6, HMGB1, triggering receptor expressed on myeloid cells (TREM-1) and endotoxin, while the serum level of IL-10 is up-regulated and myeloperoxidase (MPO) in lung, liver and small intestine is reduced[1]. Forsythoside B at doses higher than 8 mg/kg produces a significant neuroprotective potential in cerebral ischemia and reperfusion rats. Forsythoside B (20 mg/kg) demonstrates significant neuroprotective activity even after delayed administration at 1 h, 3 h and 5 h after cerebral ischemia and reperfusion. Forsythoside B 20 mg/kg attenuates histopathological damage as demonstrated by smaller brain infarct size and brain edema, decreased cerebral Evans blue extravasation and myeloperoxidase activity, inhibited cerebral phosphor-IκB-α and NF-κB expression[2]. Forsythoside B shows a significant recovery in myocardial function with improvement of LVSP and +/-dp/dt(max). The myocardial infarct volume, serum levels of Tn-T, TNF-alpha and IL-6, content of MDA and MPO activity in myocardial tissue are all reduced, protein expression of HMGB1, phosphor-I kappaB-alpha and phosphor-NF-kappaB are down-regulated, while attenuate the decrease of SOD and GPx activities[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	Forsythoside B is dissolved in sterile saline solution and added to the medium at various concentrations (from 0.1 to 10 μM) and incubated with LPS stimulated RAW264.7 cells. Cell-free supernatants are collected after Forsythoside B treatment for 24 h. Cell viability is assessed by measuring lactate dehydrogenase (LDH) in the medium[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	Rats: Forsythoside B is dissolved in sterilized saline. For the dose–response study, forsythoside B at doses of 1.3, 3.2, 8, 20 or 50 mg/kg is administered as an intravenous bolus injection at 15 min after reperfusion. The sham or vehicle-treated rats are injected with saline. Neurological deficits are determined at 23 h after reperfusion followed by brain infarct volume examination[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Free Radic Biol Med. 2021 May 14;S0891-5849(21)00308-7.
- J Ethnopharmacol. 2023 Dec 14:117581.
- J Biochem Mol Toxicol. 2023 Nov 9:e23569.
- Biochem Biophys Res Commun. 558 (2021) 86-93.

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REFERENCES

[1]. Jiang WL, et al. Forsythoside B protects against experimental sepsis by modulating inflammatory factors. Phytother Res. 2012 Jul;26(7):981-7.

[2]. Jiang WL, et al. Neuroprotective efficacy and therapeutic window of Forsythoside B: in a rat model of cerebral ischemia and reperfusion injury. Eur J Pharmacol. 2010 Aug 25;640(1-3):75-81.

[3]. Jiang WL, et al. Cardioprotection with forsythoside B in rat myocardial ischemia-reperfusion injury: relation to inflammation response. Phytomedicine. 2010 Jul;17(8-9):635-9.

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