Protosappanin A

Cat. No.: HY-113573

CAS No.: 102036-28-2

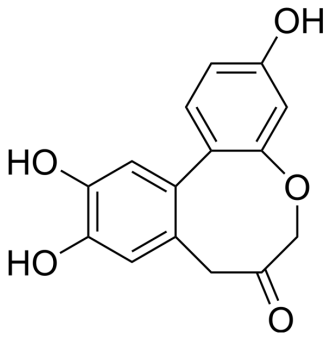
Molecular Formula: $C_{15}H_{12}O_5$

Molecular Weight: 272.25

Target: JAK; STAT

Pathway: Epigenetics; JAK/STAT Signaling; Protein Tyrosine Kinase/RTK; Stem Cell/Wnt

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (459.14 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6731 mL	18.3655 mL	36.7309 mL
	5 mM	0.7346 mL	3.6731 mL	7.3462 mL
	10 mM	0.3673 mL	1.8365 mL	3.6731 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: ≥ 2.08 mg/mL (7.64 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.64 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (7.64 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Protosappanin A (PTA), an immunosuppressive ingredient and major biphenyl compound isolated from Caesalpinia sappan L, suppresses JAK2/STAT3-dependent inflammation pathway through down-regulating the phosphorylation of JAK2 and STAT3[1].

IC_{50} & Target	JAK2	STAT3

In Vitro

Protosappanin A (PTA: 12.5, 25, 50 μM, 24 hours) significantly inhibits the production of TNF-α and IL-1β in LPS-activated BV2 microglia. And the mRNA expressions of IL-6, IL-1β, and MCP-1 are reduced by PTA in a dose-dependent manner in BV2

microglial cell line[1].
Protosappanin A (PTA: 12.5, 25, 50 μM, 24 hours) suppresses JAK2/STAT3-dependent inflammation pathway through down-regulating the phosphorylation of JAK2 and STAT3, as well as STAT3 nuclear translocation against LPS treatment[1].
Protosappanin A (PTA: 12.5, 25, 50 μM, 24 hours) shows obvious effect on disturbing the interaction of transmembrane protein CD14 with Toll-like receptor-4, resulting in the inhibition of NF-κB-dependent oxidative and nitrative stress in LPS-induced BV2 microglia[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	Murine BV2 microglial cell line.
Concentration:	12.5, 25, 50 μM.
Incubation Time:	24 hours.
Result:	Inhibits the releases of NO, TNF-α and IL-1β in LPS-induced BV2 cells. Attenuated IL-6, IL-1β and MCP-1 gene expressions in the LPS-induced BV2 cells. Suppressed JAK2/STAT3 pathway activation in the LPS-induced BV2 cells.

REFERENCES

[1]. Wang LC, et al. Protosappanin A exerts anti-neuroinflammatory effect by inhibiting JAK2-STAT3 pathway in lipopolysaccharide-induced BV2 microglia. Chin J Nat Med. 2017 Sep;15(9):674-679.

[2]. Zeng KW, et al. Protosappanin A inhibits oxidative and nitrative stress via interfering the interaction of transmembrane protein CD14 with Toll-like receptor-4 in lipopolysaccharide-induced BV-2 microglia. Int Immunopharmacol, 2012, 14(4): 558- 569.

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