Bardoxolone methyl

Cat. No.: HY-13324

CAS No.: 218600-53-4

Molecular Formula: $C_{32}H_{43}NO_4$

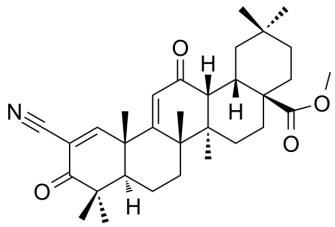
Molecular Weight: 505.69

Target: Keap1-Nrf2; Autophagy; Apoptosis; Ferroptosis

Pathway: NF-κB; 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 : 25 mg/mL (49.44 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9775 mL	9.8875 mL	19.7750 mL
	5 mM	0.3955 mL	1.9775 mL	3.9550 mL
	10 mM	0.1977 mL	0.9887 mL	1.9775 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 (4.94 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.94 mM); Clear solution
3. Add each solvent one by one: 5% DMSO >> 40% PEG300 >> 5% Tween-80 >> 50% saline
   Solubility: 2.5 mg/mL (4.94 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Bardoxolone methyl (NSC 713200; RTA 402; CDDO Methyl ester) is a synthetic triterpenoid compound with potential antineoplastic and anti-inflammatory activities, acting as an activator of the Nrf2 pathway and an inhibitor of the NF-κB pathway.

IC_{50} & Target

Nrf2[1]

In Vivo

Bardoxolone methyl (30 mg/kg, p.o.) decreases renal expression of megalin but not cubilin, increases creatinine clearance

and urinary albumin-to-creatinine ratios, and induces Nrf2 cytoprotective targets in cynomolgus monkeys[1]. Bardoxolone methyl induces overall favorable effects on the heart via its improvement in eGFR in both animal models and clinical trials[2] .

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

PROTOCOL

Animal Administration [1]

Two separate in-life studies are conducted in cynomolgus monkeys. In one study, cynomolgus monkeys (n=9/gender/dose group) are administered amorphous bardoxolone methyl by oral gavage, using sesame oil as the vehicle, at 5, 30, and 300 mg/kg once daily for 12 months in a GLP environment. Observations for morbidity, mortality, injury, and the availability of food and water are conducted twice daily for all animals. Clinical observations and body weights are conducted and recorded weekly. Weight data are analyzed by calculating the area under the weight versus time curve using the linear trapezoidal method. Blood samples for clinical chemistry evaluations are collected from all animals pretest and from all animals prior to interim (6-month) and terminal (12-month) necropsies. An additional group of monkeys for each dose group are allowed to recover for 4 weeks.

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

CUSTOMER VALIDATION

- Nat Commun. 2019 Oct 25;10(1):4878.
- Eur J Med Chem. 2020, 113030.
- J Cell Sci. 2021 Mar 23;jcs.255273.
- Mol Neurobiol. 2020 Aug;57(8):3616-3631.
- Toxicol Lett. 2016 Sep 30;259:52-59.

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REFERENCES

[1]. Reisman SA, et al. Bardoxolone Methyl Decreases Megalin and Activates Nrf2 in the Kidney. J Am Soc Nephrol. 2012 Aug 2.

[2]. McCullough PA, et al. Cardiac and renal function in patients with type 2 diabetes who have chronic kidney disease: potential effects of bardoxolone methyl. Drug Des Devel Ther. 2012;6:141-9.

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