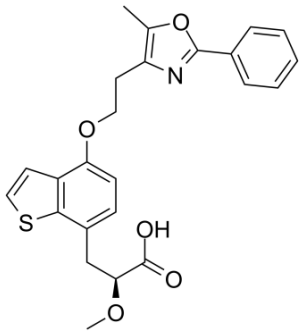
Aleglitazar



Cat. No.:	HY-14728
CAS No.:	475479-34-6
Molecular Formula:	$C_{24}H_{23}NO_5S$
Molecular Weight:	437.51
Target:	PPAR
Pathway:	Cell Cycle/DNA Damage
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 : ≥ 50 mg/mL (114.28 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2857 mL	11.4283 mL	22.8566 mL
	5 mM	0.4571 mL	2.2857 mL	4.5713 mL
	10 mM	0.2286 mL	1.1428 mL	2.2857 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 (5.71 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.71 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Aleglitazar (R1439) is a potent dual PPARα/γ agonist, with IC_{50}s of 38 nM and 19 nM for human PPARa and PPARγ, respectively. Aleglitazar can be used for the research of type II diabetes[1].

IC_{50} & Target

PPARγ	PPARα
19 nM (IC_{50})	38 nM (IC_{50})

In Vitro

Aleglitazar exhibits species selectivity with respect to PPARα, with an EC_{50}s of 50 nM, 2.26 μM and 2.34 μM for human PPARα, rat PPARα and mouse PPARα, respectively[1].

Aleglitazar (0.01-40 μM; 12-48 hours) does not significantly increase lactate dehydrogenase (LDH) release at concentrations

of 0.1 μM to 20 μM, but significant increases LDH release at concentrations of 30 μM and 40 μM[2].
Aleglitazar (0.01-20 μM; 48 hours) decreases hyperglycaemic conditions (HG, glucose 25 mM)-induced apoptosis, caspase-3 activity and cytochrome-C release[2].
Aleglitazar improves cell viability in cells exposed to hyperglycaemia[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[2]

Cell Line:	human cardiomyocytes (HCM), wild-type mice cardiomyocytes (mCM-WT)
Concentration:	0.01 μM, 0.05 μM, 0.1 μM, 0.5 μM, 1 μM, 5 μM, 10 μM, 20 μM, 30 μM, 40 μM
Incubation Time:	12 hours, 24 hours, 48 hours
Result:	Increased LDH release at concentrations of 30 μM and 40 μM.

Apoptosis Analysis[2]

Cell Line:	HCM, mCM-WT
Concentration:	0.01 μM, 0.05 μM, 0.1 μM, 0.5 μM, 1 μM, 5 μM, 10 μM, 20 μM
Incubation Time:	48 hours
Result:	Dose dependently decreased apoptosis, caspase-3 activity and cytochrome-C release induced by HG.

In Vivo

Aleglitazar (0.3-3.0 mg/kg; i.p.; daily; for 7 days) exerts beneficial effects on structural and functional outcomes of mild brain ischemia[3].
Aleglitazar reduces key aspects of microglia activation including NO production, release of proinflammatory cytokines, migration, and phagocytosis[3].
Aleglitazar attenuates inflammatory responses in post-ischemic brain[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male 129S6/SvEv mice (24-30 g), middle cerebral artery occlusion (MCAo) models[3]
Dosage:	0.3 mg/kg, 3.0 mg/kg
Administration:	Intraperitoneal injection, daily, for 7 days
Result:	Reduced the size of the ischemic lesion as assessed using NeuN immunohistochemistry on day 7.

REFERENCES

[1]. Bénardeau A, Benz J, Binggeli A, et al. Aleglitazar, a new, potent, and balanced dual PPARalpha/gamma agonist for the treatment of type II diabetes. Bioorg Med Chem Lett. 2009 May 1;19(9):2468-73.

[2]. Yan Chen, et al. Aleglitazar, a dual peroxisome proliferator-activated receptor-α and -γ agonist, protects cardiomyocytes against the adverse effects of hyperglycaemia. Diab Vasc Dis Res. 2017 Mar; 14(2): 152–162.

[3]. Valérie Boujon, et al. Dual PPARα/γ agonist aleglitazar confers stroke protection in a model of mild focal brain ischemia in mice. J Mol Med (Berl). 2019; 97(8): 1127-1138.

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

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