CH-223191

Cat. No.: HY-12684

CAS No.: 301326-22-7

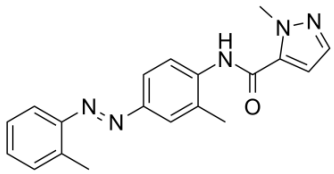
Molecular Formula: $C_{19}H_{19}N_5O$

Molecular Weight: 333.39

Target: Aryl Hydrocarbon Receptor

Pathway: Immunology/Inflammation

Storage: Powder -20°C 3 years
4°C 2 years
* The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 35 mg/mL (104.98 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.9995 mL	14.9974 mL	29.9949 mL
5 mM	0.5999 mL	2.9995 mL	5.9990 mL
10 mM	0.2999 mL	1.4997 mL	2.9995 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 (7.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

CH-223191 is a potent and specific antagonist of aryl hydrocarbon receptor (AhR).CH-223191 inhibits TCDD-mediated nuclear translocation and DNA binding of AhR, and inhibits TCDD-induced luciferase activity with an IC_{50} of 0.03 μM[1].

In Vitro

CH-223191 (0.1-10 μM; pre-treated 1 hour) inhibits TCDD-caused cytochrome P450 1A1 mRNA expression in a in dose-dependent manner[1].
CH-223191 (0.1-10 μM; pre-treated 1 hour) causes a concentration-dependent inhibition of TCDD-induced cytochrome P450 enzyme activity[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.
RT-PCR[1]

Cell Line:	HepG2 cells
Concentration:	0.1-10 μM
Incubation Time:	1 hour
Result:	Caused inhibition of TCDD-induced cytochrome P450 mRNA expression.

Western Blot Analysis[1]

Cell Line:	HepG2 cells
Concentration:	0.1-10 μM
Incubation Time:	1 hour
Result:	Decreased TCDD-caused cytochrome P450 1A1 protein Treatment.

In Vivo

CH-223191 (10 mg/kg; once a day; 25 days) suppresses cytochrome P450 1A1 expression and the intrahepatocyte fat content in liver, reduces activity of AST and ALT in TCDD-treated mice[1].

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

Animal Model:	Male ICR mice (6 weeks old)[1]
Dosage:	10 mg/kg
Administration:	10 mg/kg; once a day; 25 days
Result:	Prevented TCDD-elicited cytochrome P450 induction, liver toxicity, and wasting syndrome in mice.

CUSTOMER VALIDATION

- J Hazard Mater. 2020 Mar 5;385:121521.
- Brain Behav Immun. 2020 Aug;88:471-481.
- Sci Total Environ. 2020 Jun 1;719:135097.
- Cell Death Dis. 2019 Jan 15;10(2):38.
- Cancers (Basel). 2020 Oct 10;12(10):2915.

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REFERENCES

[1]. Zhao B, et al. CH223191 is a ligand-selective antagonist of the Ah (Dioxin) receptor. Toxicol Sci. 2010 Oct;117(2):393-403.

[2]. Kim SH, et al. Novel compound 2-methyl-2H-pyrazole-3-carboxylic acid (2-methyl-4-o-tolylazo-phenyl)-amide (CH-223191) prevents 2,3,7,8-TCDD-induced toxicity by antagonizing the aryl hydrocarbon receptor. Mol Pharmacol. 2006 Jun;69(6):1871-8.

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

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