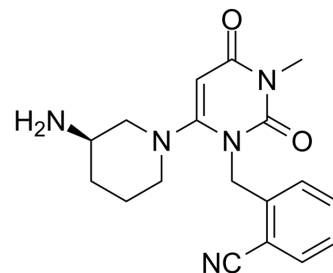


## Alogliptin

<b>Cat. No.:</b>	HY-A0023A		
<b>CAS No.:</b>	850649-61-5		
<b>Molecular Formula:</b>	C <sub>18</sub> H <sub>21</sub> N <sub>5</sub> O <sub>2</sub>		
<b>Molecular Weight:</b>	339.39		
<b>Target:</b>	Dipeptidyl Peptidase; Ferroptosis		
<b>Pathway:</b>	Metabolic Enzyme/Protease; Apoptosis		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 100 mg/mL (294.65 mM; Need ultrasonic)  
 H<sub>2</sub>O : 10 mg/mL (29.46 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.9465 mL	14.7323 mL	29.4646 mL
	5 mM	0.5893 mL	2.9465 mL	5.8929 mL
	10 mM	0.2946 mL	1.4732 mL	2.9465 mL

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

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (7.37 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (7.37 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (7.37 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Alogliptin (SYR-322 free base) is a potent, selective and orally active inhibitor of DPP-4 with an IC<sub>50</sub> of <10 nM, and exhibits greater than 10,000-fold selectivity over DPP-8 and DPP-9. Alogliptin can be used for the research of type 2 diabetes<sup>[1][2][3]</sup>.

#### IC<sub>50</sub> & Target

IC<sub>50</sub>: <10 nM (DPP-4)<sup>[1]</sup>

#### In Vitro

Alogliptin (1 nM; 5-60 min) inhibits LPS-induced extracellular signal-regulated kinase (ERK) phosphorylation in U937 cells<sup>[2]</sup>.

Alogliptin (0.5-5 nM; 24 h) inhibits LPS-stimulated MMP-1 secretion and mRNA expression that is mediated by ERK pathway in U937 cells<sup>[2]</sup>.

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

#### In Vivo

Alogliptin (0.01-1 mg/kg; p.o.) produced dose-dependent improvements in glucose tolerance and increased plasma insulin levels in female Wistar fatty rats<sup>[1]</sup>.

Alogliptin (40 mg/kg/day for 2 weeks; p.o.) reduces infarction area and improves brain vascular integrity in middle cerebral artery occlusion (MCAO) mice<sup>[3]</sup>.

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

## CUSTOMER VALIDATION

- Sci Signal. 2023 Jan 17;16(768):eabh1083.
- Biol Chem. 2023 Jan 12.
- Sci Rep. 2019 Dec 2;9(1):18094.
- Biochem Biophys Res Commun. 2019 Apr 2;511(2):387-393.
- Chromatography. 2015,36(1):19-24.

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## REFERENCES

- [1]. Feng J, et al. Discovery of alogliptin: a potent, selective, bioavailable, and efficacious inhibitor of dipeptidyl peptidase IV. *J Med Chem*. 2007 May 17;50(10):2297-300.
- [2]. Ta NN, et al. DPP-4 (CD26) inhibitor alogliptin inhibits TLR4-mediated ERK activation and ERK-dependent MMP-1 expression by U937 histiocytes. *Atherosclerosis*. 2010 Dec;213(2):429-35.
- [3]. Asakawa T, et al. A novel dipeptidyl peptidase-4 inhibitor, alogliptin (SYR-322), is effective in diabetic rats with sulfonylurea-induced secondary failure. *Life Sci*. 2009 Jul 17;85(3-4):122-6.
- [4]. Moritoh Y, et al. The dipeptidyl peptidase-4 inhibitor alogliptin in combination with pioglitazone improves glycemic control, lipid profiles, and increases pancreatic insulin content in ob/ob mice. *Eur J Pharmacol*. 2009 Jan 14;602(2-3):448-54.
- [5]. Hao FL, et al. The neurovascular protective effect of alogliptin in murine MCAO model and brain endothelial cells. *Biomed Pharmacother*. 2019 Jan;109:181-187.

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

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