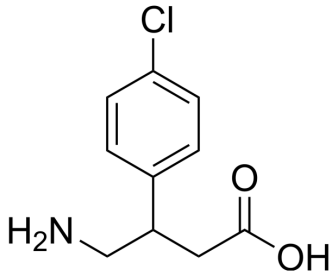
Baclofen

Cat. No.:	HY-B0007
CAS No.:	1134-47-0
Molecular Formula:	$C_{10}H_{12}ClNO_2$
Molecular Weight:	213.66
Target:	GABA Receptor
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

0.1 M HCL : 10 mg/mL (46.80 mM; Need ultrasonic)
DMSO : 4.81 mg/mL (22.51 mM; ultrasonic and warming and adjust pH to 4 with HCl and heat to 60°C)
H_2O : 2 mg/mL (9.36 mM; Need ultrasonic)

	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
Preparing Stock Solutions	**1 mM**	4.6803 mL	23.4017 mL	46.8033 mL
	5 mM	0.9361 mL	4.6803 mL	9.3607 mL
	10 mM	0.4680 mL	2.3402 mL	4.6803 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 2.5 mg/mL (11.70 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

Baclofen, a lipophilic derivative of γ-aminobutyric acid (GABA), is an orally active, selective metabotropic $GABA_B$ receptor ($GABA_BR$) agonist. Baclofen mimics the action of GABA and produces slow presynaptic inhibition through the $GABA_B$ receptor. Baclofen has high blood brain barrier penetrance. Baclofen has the potential for muscle spasticity research[1][2][3].

In Vitro

Baclofen (1, 10 μM; 24 h) causes markedly decreased lactate dehydrogenase (LDH) activity, indicating increased cell viability in wild-type or mutant huntingtin-expressing striatal cells (HD19 or HD43). Baclofen significantly increases chymotrypsin-like proteasome activity and cell viability were in the HD43 cells[3].

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

In Vivo

Baclofen (i.p.; 10 μg/g; twice daily for 3 consecutive days) ameliorates motor deficits in YAC128 HD transgenic mice[3].

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Animal Model:	Wild type (WT) and mutant (MT) male YAC128 mice at 13-18 months of age[3]
Dosage:	10 μg/g
Administration:	IP; twice daily at 9:00 a.m. and 5:00 p.m., for 3 consecutive days; then single dose on the fourth day at 9:00 a.m
Result:	Ameliorated motor deficits in YAC128 HD transgenic mice. Increased proteasome activity and reduces neuronal intranuclear inclusions (NIIs) in YAC128 HD transgenic mice.

CUSTOMER VALIDATION

- Cancer Res. 2023 Apr 14;CAN-22-3450.
- Life Sci. 2023 Sep 15;329:121984.
- FASEB J. 2020 Nov;34(11):14780-14798.
- J Ovarian Res. 2020 Oct 24;13(1):126.

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REFERENCES

[1]. Woori Kim, et al. Baclofen, a GABAB receptor agonist, enhances ubiquitin-proteasome system functioning and neuronal survival in Huntington's disease model mice. Biochem Biophys Res Commun. 2014 Jan 10;443(2):706-11.

[2]. Bexis, S., et al., Baclofen prevents MDMA-induced rise in core body temperature in rats. Drug Alcohol Depend, 2004. 74(1): p. 89-96.

[3]. Mehdi Farokhnia, et al. A deeper insight into how GABA-B receptor agonism via baclofen may affect alcohol seeking and consumption: lessons learned from a human laboratory investigation. Mol Psychiatry. 2018 Oct 31.

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

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