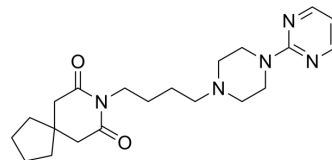


Buspirone

Cat. No.:	HY-B1115A		
CAS No.:	36505-84-7		
Molecular Formula:	C ₂₁ H ₃₁ N ₅ O ₂		
Molecular Weight:	385.5		
Target:	5-HT Receptor; Reactive Oxygen Species; Dopamine Receptor		
Pathway:	GPCR/G Protein; Neuronal Signaling; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB		
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 : 100 mg/mL (259.40 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	2.5940 mL	12.9702 mL	25.9403 mL
		5 mM	0.5188 mL	2.5940 mL	5.1881 mL
		10 mM	0.2594 mL	1.2970 mL	2.5940 mL
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (6.49 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (6.49 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (6.49 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	Buspirone is an orally active 5-HT _{1A} receptor agonist, and a dopamine D ₂ autoreceptorsant antagonist. Buspirone is an anxiolytic agent, and can be used for the generalized anxiety disorder research ^[1] .	
IC₅₀ & Target	5-HT _{1A} Receptor	Dopamine D ₂ receptor
In Vitro	The anxiolytic and anti-depressant effects of Buspirone are produced by activating 5-HT _{1A} autoreceptors and 5-HT _{1A}	

heteroreceptors, respectively^[1].
Buspirone (0-400 µg/mL; 6 hours) has cytotoxic effect in lymphocytes^[2].
Buspirone (0-180 µg/mL; 0-3 hours; lymphocytes) induces ROS formation, mitochondrial membrane potential collapse(MMP), lipid peroxidation, lysosomal damage and elevation of glutathione disulfide (GSSG)^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Cell Viability Assay^[2]

Cell Line:	Lymphocytes
Concentration:	0, 4, 20, 40, 200 and 400 µg/mL
Incubation Time:	6 hours
Result:	Decreased cell viability in a dose-dependent manner.

In Vivo

Buspirone (1-5 mg/kg; i.p. and i.g.; for 5 days; C57BL/6N mice) reduces anxiety/depression behaviors^[1].
Buspirone (1-5 mg/kg; i.p. and i.g.; for 5 days; C57BL/6N mice) restores immobilization stress (IS)-shifted β-diversity in the gut microbiota^[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male C57BL/6N mice ^[1]
Dosage:	1 and 5 mg/kg
Administration:	Oral gavage and intraperitoneal injection; for 5 days
Result:	Reduced TNF-α expression and NF-κB ⁺ /Iba1 ⁺ cell population in the hippocampus and myeloperoxidase activity and NF-κB ⁺ /CD11c ⁺ cell population in the colon.

Animal Model:	Male C57BL/6N mice ^[1]
Dosage:	1 and 5 mg/kg
Administration:	Oral gavage and intraperitoneal injection; for 5 days
Result:	Reduced the IS- or Escherichia coli K1 (EC)-induced gut Proteobacteria population.

CUSTOMER VALIDATION

- Mol Pharmacol. 2023 Nov;104(5):230-238.

See more customer validations on www.MedChemExpress.com

REFERENCES

- [1]. Salimi A, et, al. Analysis of Toxicity Effects of Buspirone, Cetirizine and Olanzapine on Human Blood Lymphocytes: in Vitro Model. Curr Clin Pharmacol. 2018;13(2):120-127.
- [2]. Kim JK, et, al. Buspirone alleviates anxiety, depression, and colitis; and modulates gut microbiota in mice. Sci Rep. 2021 Mar 17;11(1):6094.

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

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