

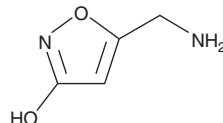
PRODUCT INFORMATION



Muscimol

Item No. 13667

CAS Registry No.: 2763-96-4
Formal Name: 5-(aminomethyl)-3(2H)-isoxazolone
Synonyms: Agarin, NSC 333569, Pantherine
MF: $C_4H_6N_2O_2$
FW: 114.1
Purity: $\geq 98\%$
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Muscimol is supplied as a crystalline solid. Aqueous solutions of muscimol can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of muscimol in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

The amino acid γ -aminobutyric acid (GABA) is an inhibitory neurotransmitter that acts through two families of heteromeric ligand-gated ion channels, $GABA_A$ and $GABA_C$ and a G protein-coupled receptor, $GABA_B$. Muscimol is a full $GABA_A$ agonist and partial $GABA_C$ agonist. It binds $GABA_A$ on both high- and low-affinity sites ($K_d = 10$ and 270 nM, respectively), stimulating chloride efflux with an EC_{50} value of 200 nM.¹ Benzodiazepines enhance the effects of muscimol via $GABA_A$ without altering its binding.^{1,2} Muscimol activates $GABA_C$ receptors with an EC_{50} value of 1.3 μM .³ It also acts as an inhibitor of $GABA_A$ uptake and a substrate for the GABA-metabolizing enzyme GABA transaminase.⁴ Muscimol impairs memory formation and retrieval in mice and attenuates airway constriction in guinea pigs *in vivo*.^{5,6}

References

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3. Zhang, D., Pan, Z.-H., Awobuluyi, M., et al. Structure and function of $GABA_C$ receptors: A comparison of native versus recombinant receptors. *Trends Pharmacol. Sci.* **22**(3), 121-132 (2001).
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6. Gleason, N.R., Gallos, G., Zhang, Y., et al. The $GABA_A$ agonist muscimol attenuates induced airway constriction in guinea pigs *in vivo*. *J. Appl. Physiol.* **106**, 1257-1263 (2009).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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