

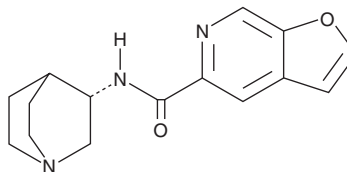
PRODUCT INFORMATION



PHA-543613

Item No. 42222

CAS Registry No.: 478149-53-0
Formal Name: N-(3R)-1-azabicyclo[2.2.2]oct-3-yl-furo[2,3-c]pyridine-5-carboxamide
MF: C₁₅H₁₇N₃O₂
FW: 271.3
Purity: ≥95%
Supplied as: A 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

PHA-543613 is supplied as a solid. A stock solution may be made by dissolving the PHA-543613 in the solvent of choice, which should be purged with an inert gas. PHA-543613 is soluble (≥10 mg/ml) in DMSO.

Description

PHA-543613 is an agonist of $\alpha 7$ nicotinic acetylcholine receptors (nAChRs).^{1,2} It is selective for $\alpha 7$ nAChRs over $\alpha 4\beta 2$ -, $\alpha 4\beta 4$ -, $\alpha 3\beta 2$ -, or $\alpha 3\beta 4$ subunit-containing nAChRs and the serotonin (5-HT) receptor subtype 5-HT₃ (EC₅₀s = 0.03, >100, >50, >100, >100, and 11 μ M, respectively, in calcium mobilization assays).¹ PHA-543613 prevents decreases in the number of retinal ganglion cells in a rat model of glaucoma when applied topically.³ It improves sensorimotor deficits and reduces brain edema in a mouse model of intracerebral hemorrhage, effects that can be reversed by methyllycaconitine (Item No. 21398) or wortmannin (Item No. 10010591).⁴ PHA-543613 (1 mg/kg) increases the time spent with the novel object in the novel object recognition test and reverses amphetamine-induced auditory gating deficits in rats.² Intracerebroventricular administration of PHA-543613 (0.1 mg/animal) reduces food intake and body weight in rats.⁵

References

1. Gao, B., Hierl, M., Clarkin, K., et al. Pharmacological effects of nonselective and subtype-selective nicotinic acetylcholine receptor agonists in animal models of persistent pain. *Pain* **149**(1), 33-49 (2010).
2. Wishka, D.G., Walker, D.P., Yates, K.M., et al. Discovery of N-[(3R)-1-azabicyclo[2.2.2]oct-3-yl]furo[2,3-c]pyridine-5-carboxamide, an agonist of the $\alpha 7$ nicotinic acetylcholine receptor, for the potential treatment of cognitive deficits in schizophrenia: Synthesis and structure-activity relationship. *J. Med. Chem.* **49**(14), 4425-4436 (2006).
3. Birkholz, P.J., Gossman, C.A., Webster, M.K., et al. Prevention of glaucoma-induced retinal ganglion cell loss using $\alpha 7$ nAChR agonists. *J. Ophthalmol. Vis. Sci.* **1**(1), 1003 (2016).
4. Krafft, P.R., Caner, B., Klebe, D., et al. PHA-543613 preserves blood-brain barrier integrity after intracerebral hemorrhage in mice. *Stroke* **44**(6), 1743-1747 (2013).
5. DiBrog, A.M., Kern, K.A., Demieri, E., et al. The $\alpha 7$ nicotinic acetylcholine receptor agonist PHA-543613 reduces food intake in male rats. *Pharmacol. Biochem. Behav.* **237**, 173723 (2024).

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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