Small Molecules

Atipamezole (Hydrochloride)

Selective α2-adrenergic receptor antagonist

Catalog #100-0892

10 mg

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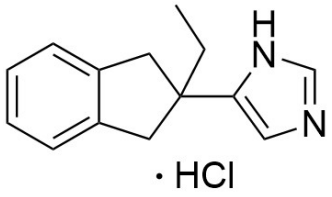
Product Description

Atipamezole is an imidazole derivative and a selective α2-adrenergic receptor antagonist (K_i = 1.6 nM; Pertovaara et al.). α2-adrenergic receptor is involved in the processing of amyloid precursor protein, and is therefore a potential therapeutic target for Alzheimer's disease (Chen et al.). Atipamezole is used to reverse the sedative and analgesic effects of dexmedetomidine (Scheinin et al.), and it has also been used to assess cognitive performance of rat models in Parkinson's disease research (Haapalinna et al.).

Alternative Names:	Not applicable
CAS Number:	104075-48-1
Chemical Formula:	$C_{14}H_{16}N_2 \bullet HCl$
Molecular Weight:	248.8 g/mol
Purity:	≥ 98%
Chemical Name:	5-(2-ethyl-2,3-dihydro-1H-inden-2-yl)-1H-imidazole, monohydrochloride
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 40 mM · Absolute ethanol ≤ 40 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 10 mg in 4.02 mL of DMSO. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

DISEASE MODELING
· Reverses the sedative effects of α2-adrenergic receptor agonists in animals (Ewing et al.; Pertovaara et al.; Vainio & Vähä-Vahe).
· Improves the efficacy of L-DOPA and apomorphine in animals with Parkinson's disease (Pertovaara et al.).
· Enhances the turnover of serotonin and dopamine in aged rats (Haapalinna et al.).

References

Chen Y et al. (2014) α(2A) adrenergic receptor promotes amyloidogenesis through disrupting APP-SorLA interaction. Proc Natl Acad Sci USA 111(48): 17296–301.

Ewing KK et al. (1993) Reduction of isoflurane anesthetic requirement by medetomidine and its restoration by atipamezole in dogs. Am J Vet Res 54(2): 294–9.

Haapalinna A et al. (2000) The effects of a specific alpha(2)-adrenoceptor antagonist, atipamezole, on cognitive performance and brain neurochemistry in aged Fisher 344 rats. Eur J Pharmacol 387(2): 141–50.

Pertovaara A et al. (2005) Pharmacological properties, central nervous system effects, and potential therapeutic applications of atipamezole, a selective alpha2-adrenoceptor antagonist. CNS Drug Rev 11(3): 273–88.

Scheinin H et al. (1998) Reversal of the sedative and sympatholytic effects of dexmedetomidine with a specific alpha2-adrenoceptor antagonist atipamezole: a pharmacodynamic and kinetic study in healthy volunteers. Anesthesiology 89(3): 574–84.

Vainio O & Vähä-Vahe T. (1990) Reversal of medetomidine sedation by atipamezole in dogs. J Vet Pharmacol Ther 13(1): 15–22.

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