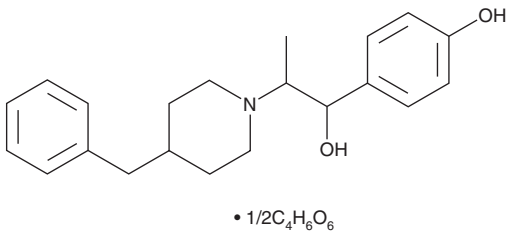
PRODUCT INFORMATION

Ifenprodil (hemitartrate)

Item No. 17201

CAS Registry No.: 23210-58-4
Formal Name: α-(4-hydroxyphenyl)-β-methyl-4-(phenylmethyl)-1-piperidineethanol, 2R,3R-dihydroxybutanedioate (2:1)
Synonym: NP-120
MF: $C_{21}H_{27}NO_2 \bullet 1/2C_4H_6O_6$
FW: 400.5
Purity: ≥98%
UV/Vis.: λ_{max}: 227, 278 nm
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

Ifenprodil (hemitartrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the ifenprodil (hemitartrate) in the solvent of choice, which should be purged with an inert gas. Ifenprodil (hemitartrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ifenprodil (hemitartrate) in ethanol and DMSO is approximately 30 mg/ml and approximately 50 mg/ml in DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of ifenprodil (hemitartrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of ifenprodil (hemitartrate) in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Ifenprodil is an antagonist of NR1A/NR2B subunit-containing NMDA receptors (IC_{50} = 340 nM).[1] It is selective for NR1A/NR2B subunit-containing NMDA receptors over those containing NR1A/NR2A or NR1A/NR2C subunits (IC_{50}s = 20 and >100 µM, respectively) but also binds to sigma 1 (σ1) receptors, emopamil binding protein, and fungal C-8 sterol isomerase/ERG2 (K_is = 2, 5, and 1 nM, respectively), as well as α_1 adrenergic receptors (α_1-AR; IC_{50} = 110 nM), and the serotonin receptor types 5-HT_{1A} and 5-HT_2 (IC_{50}s = 238 and 610 nM, respectively).[2-4] Ifenprodil inhibits infection of MDCK cells by H1N1 and H3N2 influenza isolates *in vitro* (EC_{50}s = 6.6 and 16.9 µM, respectively).[5] It increases the production of NGF, BDNF, and GDNF in primary mouse astrocytes when used at a concentration of 150 µM.[6] Ifenprodil also reduces maximal electroshock seizures in mice (ED_{50}s = 16 and 7 mg/kg, respectively).[2]

References

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3. Laggner, C., Schieferer, C., Fiechtner, B., *et al. J. Med Chem.* **48(15)**, 4754-4764 (2005).
4. Chenard, B.L., Shalaby, I.A., Koe, B.K., *et al. J. Med. Chem.* **34(10)**, 3085-3090 (1991).
5. Jang, Y., Shin, J.S., Lee, J.-Y., *et al. Viruses* **12(5)**, 581 (2020).
6. Toyomoto, M., Inoue, S., Ohta, K., *et al. Neurosci. Lett.* **379(3)**, 185-189 (2005).

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