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DATASHEET

Donepezil hydrochloride

Product overview

Name	Donepezil hydrochloride
Cat No	HB2083
Purity	>98%
Description	Potent AChE inhibitor

Biological Data

Biological description	Potent acetylcholinesterase inhibitor ($IC_{50} = 5.7$ nM) which increases acetylcholine levels. Displays >1200-fold selectivity for AChE over butyrylcholinesterase (BuChE). Orally active. Shows anti-inflammatory properties, neuroprotective activity and attenuates amyloid- β load <i>in vitro</i> and <i>in vivo</i> . In combination, donepezil and LSL60101 decrease amyloid- β_{40} and amyloid- β_{42} levels, amyloid- β plaque number and tau hyperphosphorylation to attenuate amyloid- β pathology in 5XFAD brains. Chronic low-dose treatment with LSL60101 and donepezil reversed cognitive deficits and impaired social behaviour.
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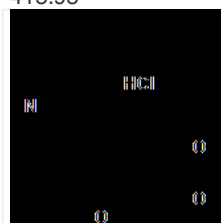
Solubility & Handling

Storage instructions	Room Temperature
Solubility overview	Soluble in water (50 mM)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

Chemical Data

Chemical name	2,3-Dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1H-inden-1-one hydrochloride
Molecular Weight	415.95

Chemical structure



Molecular Formula	$C_{24}H_{29}NO_3 \cdot HCl$
CAS Number	120011-70-3
PubChem identifier	5741
SMILES	<chem>COC1=C(C=C2C(=C1)CC(C2=O)CC3CCN(CC3)CC4=CC=CC=C4)OC.Cl</chem>
InChi	InChI=1S/C24H29NO3.ClH/c1-27-22-14-19-13-20(24(26)21(19)15-23(22)28-2)12-17-8-10-25(11-9-17)16-18-6-4-3-5-7-18;/h3-7,14-15,17,20H,8-13,16H2,1-2H3;1H
InChiKey	XWAIWVWHZJNZQQ-UHFFFAOYSA-N
MDL number	MFCD17215939
Appearance	White solid

References

Disease-modifying treatment with I2 imidazoline receptor ligand LSL60101 in an Alzheimer's disease mouse model: a comparative study with donepezil.

Vasilopoulou F et al (2021) British journal of pharmacology 178

PubMedID [33817786](#)

Synthesis and structure-activity relationships of acetylcholinesterase inhibitors:

1-benzyl-4-[(5,6-dimethoxy-1-oxoindan-2-yl)methyl]piperidine hydrochloride and related compounds.

Sugimoto H et al (1995) Journal of medicinal chemistry 38

PubMedID [7490731](#)

Donepezil hydrochloride (E2020) and other acetylcholinesterase inhibitors.

Sugimoto H et al (2000) Current medicinal chemistry 7

PubMedID [10637367](#)
