

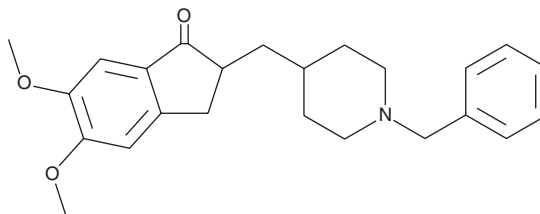
# PRODUCT INFORMATION



## Donepezil

Item No. 13245

**CAS Registry No.:** 120014-06-4  
**Formal Name:** 2,3-dihydro-5,6-dimethoxy-2[[1-(phenylmethyl)-4-piperidinyl]methyl]-1H-inden-1-one  
**MF:** C<sub>24</sub>H<sub>29</sub>NO<sub>3</sub>  
**FW:** 379.5  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 208, 231, 269, 314 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

Donepezil is supplied as a crystalline solid. A stock solution may be made by dissolving the donepezil in the solvent of choice, which should be purged with an inert gas. Donepezil is soluble in organic solvents such as chloroform and acetone. The solubility of donepezil in these solvents is approximately 50 and 25 mg/ml, respectively.

### Description

Donepezil is an inhibitor of acetylcholinesterase (AChE; IC<sub>50</sub> = 6.7 nM).<sup>1</sup> It is selective for AChE over butyrylcholinesterase (BChE; IC<sub>50</sub> = 988 nM). Donepezil (0.1 and 1 μM) inhibits the production of nitric oxide (NO) and TNF-α induced by oligomeric amyloid-β (1-42) (Aβ<sub>1-42</sub>) in primary rat microglial cells.<sup>2</sup> It increases ACh levels in the cortex and hippocampus of aged rats when administered at a dose of 1.5 mg/kg.<sup>3</sup> Donepezil (2 mg/kg) reduces Mac-1 and GFAP protein expression, markers of microglia and astrocyte activation, respectively, in the hippocampal dentate gyrus of a mouse model of Alzheimer's disease induced by intrahippocampal injection of Aβ<sub>1-42</sub>.<sup>2</sup> It increases step-through latency in a passive avoidance test in the same model. Formulations containing donepezil have been used in the treatment of Alzheimer's disease.

### References

1. Cacabelos, R. Donepezil in Alzheimer's disease: From conventional trials to pharmacogenetics. *Neuropsychiatr. Dis. Treat.* **3(3)**, 303-333 (2007).
2. Kim, H.G., Moon, M., Choi, J.G., *et al.* Donepezil inhibits the amyloid-beta oligomer-induced microglial activation *in vitro* and *in vivo*. *Neurotoxicology* **40**, 23-32 (2014).
3. Scali, C., Casamenti, F., Bellucci, A., *et al.* Effect of subchronic administration of metrifonate, rivastigmine and donepezil on brain acetylcholine in aged F344 rats. *J. Neural Transm. (Vienna)* **109(7-8)**, 1067-1080 (2002).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/16/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM