

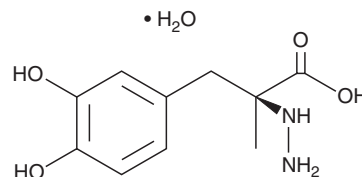
PRODUCT INFORMATION



Carbidopa (hydrate)

Item No. 23783

CAS Registry No.: 38821-49-7
Formal Name: (αS)-α-hydrazinyl-3,4-dihydroxy-α-methyl-benzenepropanoic acid, monohydrate
MF: C₁₀H₁₄N₂O₄ • H₂O
FW: 244.2
Purity: ≥98%
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

Carbidopa (hydrate) is supplied as a solid. A stock solution may be made by dissolving the carbidopa (hydrate) in the solvent of choice, which should be purged with an inert gas. Carbidopa (hydrate) is slightly soluble in organic solvents such as methanol and DMSO.

Description

Carbidopa is a peripherally restricted inhibitor of dopamine decarboxylase, the enzyme that converts L-DOPA (Item No. 13248) to dopamine.¹ Carbidopa (100 mg/kg) pretreatment in dog increases the plasma concentration of L-DOPA by 186% and prolongs the half-life in plasma by 48% and skeletal muscle extracellular fluid by 66%.² Carbidopa also binds to and potentiates the activity of the aryl hydrocarbon receptor (AhR), which is a ligand-dependent transcription factor that mediates the toxicity of certain xenobiotics and polyaromatic hydrocarbons.³ It inhibits the proliferation of pancreatic cancer cells *in vitro* and tumor growth *in vivo*. Formulations containing carbidopa are used in combination with L-DOPA in the treatment of Parkinson's disease to increase the amount of dopamine in the brain and reduce peripheral side effects associated with L-DOPA administration.

References

1. Clark, W.G., Oldendorf, W.H., and Dewhurst, W.G. Blood-brain barrier to carbidopa (MK-486) and Ro 4-4602, peripheral dopa decarboxylase inhibitors. *J. Pharm. Pharmacol.* **25(5)**, 416-418 (1973).
2. Deleu, D., Sarre, S., Ebinger, G., *et al.* The effect of carbidopa on the pharmacokinetics and metabolism of intravenously administered levodopa in blood plasma and skeletal muscle. *Naunyn Schmiedebergs Arch. Pharmacol.* **348(6)**, 576-581 (1993).
3. Ogura, J., Miyauchi, S., Shimono, K., *et al.* Carbidopa is an activator of aryl hydrocarbon receptor with potential for cancer therapy. *Biochem J.* **474(20)**, 3391-3402 (2017).

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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