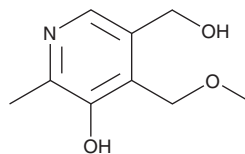


PRODUCT INFORMATION

Ginkgotoxin

Item No. 33460

CAS Registry No.: 1464-33-1
Formal Name: 5-hydroxy-4-(methoxymethyl)-6-methyl-3-pyridinemethanol
Synonyms: MPN, 4'-O-Methylpyridoxine, 4'-Methoxypyridoxine
MF: C₉H₁₃NO₃
FW: 183.2
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ginkgotoxin is supplied as a crystalline solid. A stock solution may be made by dissolving the ginkgotoxin in the solvent of choice, which should be purged with an inert gas. Ginkgotoxin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ginkgotoxin is approximately 1 mg/ml in ethanol and DMF and approximately 5 mg/ml in DMSO.

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 ginkgotoxin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of ginkgotoxin in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Ginkgotoxin is a pyridoxine antimetabolite that has been found in *G. biloba*.^{1,2} It inhibits pyridoxal kinase ($K_i = 3 \mu\text{M}$), the enzyme that converts pyridoxine into its active form, pyridoxal 5'-phosphate (PLP; Item No. 20352).³ Ginkgotoxin (200-1,000 μM) induces seizure-like behavior in zebrafish larvae, an effect that can be reversed by PLP or GABA.⁴

References

1. Wada, K., Ishigaki, S., Ueda, K., *et al.* An antivitamin B₆, 4'-methoxypyridoxine, from the seed of *Ginkgo biloba* L. *Chem. Pharm. Bull.* **33(8)**, 3555-3557 (1985).
2. Arenz, A., Klein, M.K., Fiehe, K., *et al.* Occurrence of neurotoxic 4'-O-methylpyridoxine in *Ginkgo biloba* leaves, *Ginkgo* medications and Japanese *Ginkgo* food. *Planta Med.* **62(6)**, 548-551 (1996).
3. Gandhi, A.K., Desai, J.V., Ghatge, M.S., *et al.* Crystal structures of human pyridoxal kinase in complex with the neurotoxins, ginkgotoxin and theophylline: Insights into pyridoxal kinase inhibition. *PLoS One* **7(7)**, e40954 (2012).
4. Lee, G.-H., Sung, S.-Y., Chang, W.-N., *et al.* Zebrafish larvae exposed to ginkgotoxin exhibit seizure-like behavior that is relieved by pyridoxal-5'-phosphate, GABA and anti-epileptic drugs. *Dis. Model. Mech.* **5(6)**, 785-795 (2012).

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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