

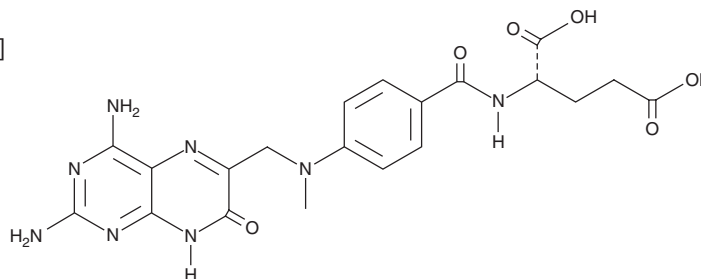
PRODUCT INFORMATION



7-hydroxy Methotrexate

Item No. 33239

CAS Registry No.: 5939-37-7
Formal Name: N-[4-[[[(2,4-diamino-7,8-dihydro-7-oxo-6-pteridiny)methyl]methylamino]benzoyl]-L-glutamic acid
Synonyms: NSC 380962, 7-hydroxy MTX
MF: C₂₀H₂₂N₈O₆
FW: 470.4
Purity: ≥98%
UV/Vis.: λ_{max}: 266, 304, 354 nm
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

7-hydroxy Methotrexate (7-hydroxy MTX) is supplied as a solid. A stock solution may be made by dissolving the 7-hydroxy MTX in the solvent of choice, which should be purged with an inert gas. 7-hydroxy MTX is slightly soluble in ethanol and DMSO.

Description

7-hydroxy MTX is the major metabolite of the folic acid derivative MTX (Item No. 13960).¹ It is formed by the 7-oxidation of MTX by hepatic aldehyde oxidases. Unlike MTX, 7-hydroxy MTX does not inhibit thymidylate synthase in isolated human acute myeloid and acute lymphoblastic leukemia cells.² 7-hydroxy MTX has a maximum tolerated dose of 0.1 g/kg, which is 30- to 50-fold lower than MTX, in rats.³ Serum levels of 7-hydroxy MTX have been used as a marker of MTX toxicity during chemotherapy.^{4,5}

References

1. Johns, D.G., Iannotti, A.T., Sartorelli, A.C., *et al.* The relative toxicities of methotrexate and aminopterin. *Biochem. Pharmacol.* **15(5)**, 555-561 (1966).
2. Lingg, R.M., Hempel, G., Rots, M.G., *et al.* Effects and interaction of 7-hydroxy methotrexate and methotrexate in leukaemic cells ex vivo measured by the thymidylate synthase inhibition assay. *Cancer Chemother. Pharmacol.* **56(3)**, 322-327 (2005).
3. Fuskevåg, O.M., Kristiansen, C., Lindal, S., *et al.* Maximum tolerated doses of methotrexate and 7-hydroxy-methotrexate in a model of acute toxicity in rats. *Cancer Chemother. Pharmacol.* **46(1)**, 69-73 (2000).
4. Schofield, R.C., Ramanathan, L.V., Murata, K., *et al.* Development of an assay for methotrexate and its metabolites 7-hydroxy methotrexate and DAMPA in serum by LC-MS/MS. *Methods in Molecular Biology* Uttam, G., editor, 1st edition, *Humana Press* (2016).
5. Klapkova, E., Kukacka, J., Kotaska, K., *et al.* The influence of 7-OH methotrexate metabolite on clinical relevance of methotrexate determination. *Clin. Lab.* **57(7-8)**, 599-606 (2011).

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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