

# PRODUCT INFORMATION



## 7-hydroxy Methotrexate (sodium salt)

Item No. 21788

**Formal Name:** N-[4-[[[(2,4-diamino-7,8-dihydro-7-oxo-6-pteridiny)methyl]methylamino]benzoyl]-L-glutamic acid, trisodium salt

**Synonym:** 7-hydroxy MTX

**MF:** C<sub>20</sub>H<sub>19</sub>N<sub>8</sub>O<sub>6</sub> • 3Na

**FW:** 536.4

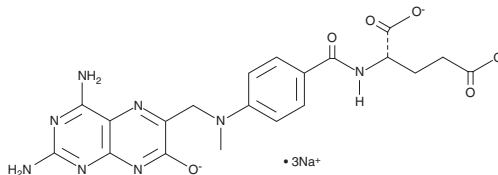
**Purity:** ≥95%

**UV/Vis.:** λ<sub>max</sub>: 259, 304 nm

**Supplied as:** A solid

**Storage:** 4°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) (sodium salt) is supplied as a solid. A stock solution may be made by dissolving the 7-hydroxy MTX (sodium salt) in the solvent of choice, which should be purged with an inert gas. 7-hydroxy MTX (sodium salt) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 7-hydroxy MTX (sodium salt) in these solvents is approximately 3 and 14 mg/ml, respectively.

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 7-hydroxy MTX (sodium salt) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 7-hydroxy MTX (sodium salt) in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

7-hydroxy MTX is a phase I metabolite of methotrexate (Item No. 13960), which is converted by hepatic aldehyde oxidases.<sup>1</sup> Elimination of 7-hydroxy MTX is associated with the multi-drug transporters Abcc2, Abcc3, and Abcg2 in transgenic mouse models. It and the parent compound rapidly accumulate when all three transporters are absent.<sup>2</sup> Formulations containing MTX have been used in the treatment of cancer, autoimmune diseases, ectopic pregnancy, and for the induction of medical abortions.<sup>3,4</sup> Various methods have been described to quantify 7-hydroxy MTX levels during cancer therapy to avoid toxicity.<sup>5,6</sup>

### References

1. Johns, D.G., Iannotti, A.T., Sartorelli, A.C., *et al. Biochem. Pharmacol.* **15**(5), 555-561 (1966).
2. Vlaming, M.L.H., van Esch, A., Pala, Z., *et al. Mol. Cancer. Ther.* **8**(12), 3350-3359 (2009).
3. Cutolo, M., Sulli, A., Pizzorni, C., *et al. Ann. Rheum. Dis.* **60**(8), 729-735 (2001).
4. Christin-Maitre, S., Bouchard, P., and Spitz, I.M. *N. Engl. J. Med.* **342**(13), 946-956 (2000).
5. Schofield, R.C., Ramanathan, L.V., Murata, K., *et al. Methods in Molecular Biology* 213-222 (2016).
6. Klapkova, E., Kukacka, J., Kotaska, K., *et al. 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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#### 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](http://WWW.CAYMANCHEM.COM)