

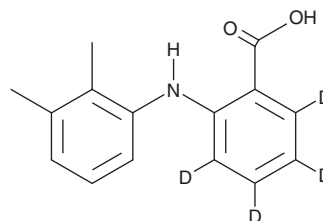
# PRODUCT INFORMATION



## Mefenamic Acid-d<sub>4</sub>

Item No. 31788

**CAS Registry No.:** 1216745-79-7  
**Formal Name:** 6-[(2,3-dimethylphenyl)amino]-benzoic-2,3,4,5-d<sub>4</sub> acid  
**Synonym:** C.I. 473-d<sub>4</sub>  
**MF:** C<sub>15</sub>H<sub>11</sub>D<sub>4</sub>NO<sub>2</sub>  
**FW:** 245.3  
**Chemical Purity:** ≥98% (Mefenamic Acid)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**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

Mefenamic acid-d<sub>4</sub> is intended for use as an internal standard for the quantification of mefenamic acid (Item No. 23650) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Mefenamic acid-d<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the mefenamic acid-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. Mefenamic acid-d<sub>4</sub> is slightly soluble in DMSO and methanol.

### Description

Mefenamic acid is a non-steroidal anti-inflammatory drug (NSAID) and a COX-2 inhibitor.<sup>1</sup> It binds to COX-2 (K<sub>d</sub> = 4 nM) and inhibits COX-2-dependent oxygenation of arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) *in vitro* (K<sub>i</sub> = 10 μM). Mefenamic acid (30 mg/kg) reduces acetic acid-induced writhing in rats.<sup>2</sup> It inhibits increases in skin thickness in a mouse model of delayed-type hypersensitivity induced by dinitrochlorobenzene (DNBC).<sup>2</sup> Mefenamic acid also reduces the antibody response to sheep red blood cells in mice.

### References

1. Prusakiewicz, J.J., Duggan, K.C., Rouzer, C.A., *et al.* Differential sensitivity and mechanism of inhibition of COX-2 oxygenation of arachidonic acid and 2-arachidonoylglycerol by ibuprofen and mefenamic acid. *Biochemistry* **48**(31), 7353-7355 (2009).
2. Roszkowski, A.P., Rooks, W.H., Tomolonis, A.J., *et al.* Anti-inflammatory and analgetic properties of *d*-2-(6'-methoxy-2'-naphthyl)-propionic acid (naproxen). *J. Pharmacol. Exp. Ther.* **179**(1), 114-123 (1971).

#### 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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