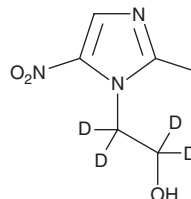


# PRODUCT INFORMATION



## Metronidazole-d<sub>4</sub> Item No. 10010659

**CAS Registry No.:** 1261392-47-5  
**Formal Name:** 2-(2-methyl-5-nitro-1H-imidazol-1-yl)ethan-1,1,2,2-d<sub>4</sub>-1-ol  
**MF:** C<sub>6</sub>H<sub>5</sub>D<sub>4</sub>N<sub>3</sub>O<sub>3</sub>  
**FW:** 175.2  
**Chemical Purity:** ≥98% (Metronidazole)  
**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

Metronidazole-d<sub>4</sub> is intended for use as an internal standard for the quantification of metronidazole (Item No. 9002409) 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).

Metronidazole-d<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the metronidazole-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. Metronidazole-d<sub>4</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of metronidazole-d<sub>4</sub> in ethanol is approximately 5 mg/ml and approximately 15 mg/ml in DMSO and DMF.

### Description

Metronidazole is an antibiotic that has activity against anaerobic bacteria and protozoa including *T. vaginalis*, *E. histolytica*, *G. lamblia*, *C. difficile*, and *H. pylori*.<sup>1</sup> It reduces the growth of *E. coli* *in vitro* (MIC = 128 mg/L under anaerobic conditions).<sup>2</sup> *In vivo*, metronidazole reduces viable counts of *B. fragilis* in a rabbit model of infection. Formulations containing metronidazole have been used in the treatment of various infections including *H. pylori* and *C. difficile*.

### References

1. Samuelson, J. Why metronidazole is active against both bacteria and parasites. *Antimicrob. Agents Chemother.* **43(7)**, 1533-1541 (1999).
2. Rylander, M., Holm, S.E., Brorson, J.-E., et al. Activity of metronidazole on *Bacteroides fragilis* and/or *Escherichia coli* *in vitro* and *in vivo*. *J. Antimicrob. Chemother.* **7(3)**, 257-267 (1981).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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