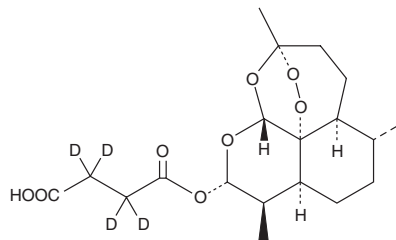


# PRODUCT INFORMATION



## Artesunate-d<sub>4</sub> Item No. 28769

**CAS Registry No.:** 1316753-15-7  
**Formal Name:** 4-oxo-4-(((3R,5aS,6R,8aS,9R,10S,12R,12aR)-3,6,9-trimethyldecahydro-12H-3,12-epoxy[1,2]dioxepino[4,3-i]isochromen-10-yl)oxy)butanoic-2,2,3,3-d<sub>4</sub> acid  
**Synonym:** Artesunic Acid-d<sub>4</sub>  
**MF:** C<sub>19</sub>H<sub>24</sub>D<sub>4</sub>O<sub>8</sub>  
**FW:** 388.5  
**Chemical Purity:** ≥98% (Artesunate)  
**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

Artesunate-d<sub>4</sub> is intended for use as an internal standard for the quantification of artesunate (Item No. 11817) 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).

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

### Description

Artesunate is a derivative of artemisinin (Item No. 11816) that is active against *P. falciparum* *in vitro* (IC<sub>50</sub> = 1.28 nM).<sup>1</sup> It is an iron(II) oxide-reactive endoperoxide that generates reactive oxygen species (ROS) upon cleavage of its endoperoxide bridge.<sup>2</sup> It inhibits the activity of the *P. falciparum* EXP1, a glutathione S-transferase (GST) that degrades hemozoin, with an IC<sub>50</sub> value of 2.05 nM.<sup>5</sup> Artesunate inhibits proliferation of germinal center B cells *in vitro* and prevents development of arthritis *via* inhibition of germinal center formation and autoantibody production in the K/BxN mouse model of rheumatoid arthritis when administered at a dose of 100 mg/kg twice per day.<sup>3</sup> It also inhibits alveolitis and pulmonary fibrosis induced by bleomycin (Item No. 13877) in rats.<sup>4</sup> Artesunate increases the activity of GST in mice infected with *P. berghei* compared to uninfected and infected control animals.<sup>6</sup>

### References

1. Akoachere, M., Buchholz, K., Fischer, E., *et al.* *Antimicrob. Agents Chemother.* **49(11)**, 4592-4597 (2005).
2. Ooko, E., Saeed, M.E.M., Kadioglu, O., *et al.* *Phytomedicine* **22(11)**, 1045-1054 (2015).
3. Hou, L., Block, K.E., and Huang, H. *PloS One* **9(8)**, e104762 (2014).
4. Wang, Y., Huang, G., Mo, B., *et al.* *Genet. Mol. Res.* **15(2)**, (2016).
5. Lisewski, A.M., Quiros, J.P., Ng, C.L., *et al.* *Cell* **158(4)**, 916-928 (2014).
6. Olanlokun, J.O., Balogun, F.A., and Olorunsogo, O.O. *Drug Chem. Toxicol.* **44(1)**, 47-57 (2021).

#### 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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