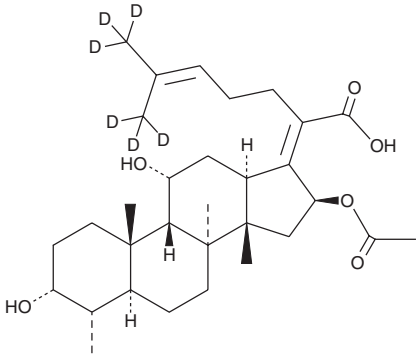
PRODUCT INFORMATION

Fusidic Acid-d_6

Item No. 29994



Formal Name:	(Z)-2-((3R,4S,5S,8S,9S,10S,11R,13R, 14S,16S)-16-acetoxy-3,11-dihydroxy-4,8,10,14-tetramethylhexadecahydro-17H-cyclopenta[a]phenanthren-17-ylidene)-6-(methyl-d_3)hept-5-enoic-7,7,7-d_3 acid
MF:	$C_{31}H_{42}D_6O_6$
FW:	522.8
Chemical Purity:	≥98% (Fusidic Acid)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_6); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Fusidic acid-d_6 is intended for use as an internal standard for the quantification of fusidic acid (Item No. 14825) 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).

Fusidic acid-d_6 is supplied as a solid. A stock solution may be made by dissolving the fusidic acid-d_6 in the solvent of choice, which should be purged with an inert gas. Fusidic acid-d_6 is soluble in methanol and sparingly soluble in chloroform.

Description

Fusidic acid is a fusidane antibiotic originally isolated from *F. coccineum*.[1] It is active against the Gram-positive bacteria *S. aureus*, *S. pyogenes*, *C. diphtheriae*, *B. subtilis*, and *C. tetani* (MIC_{50}s = 0.01-20 µg/ml) but not the Gram-negative bacteria *E. coli*, *S. typhimurium*, and *P. vulgaris* or the fungi *C. albicans* and *A. fumigatus* (MIC_{50}s = >100 µg/ml for all).[2] Fusidic acid inhibits ribosomal recycling and protein translocation, processes mediated by elongation factor G (EF-G), in isolated *E. coli* ribosomes (IC_{50}s = ~0.1 and ~200 µM, respectively).[3] Topical administration of fusidic acid (2%) reduces the number of skin colony forming units (CFUs) and levels of TNF-α and IL-6 in a mouse model of methicillin-resistant *S. aureus* (MRSA) skin wound infection.[4]

References

1. Verbist, L. The antimicrobial activity of fusidic acid. *J. Antimicrob. Chemother.* **25(Suppl. B)**, 1-5 (1990).
2. Godtfredsen, W.O., Jahnsen, S., Lorck, H., *et al.* Fusidic acid: A new antibiotic. *Nature* **193**, 987 (1962).
3. Savelsbergh, A., Rodnina, M.V., and Wintermeyer, W. Distinct functions of elongation factor G in ribosome recycling and translocation. *RNA* **15(5)**, 772-780 (2009).
4. Mohamed, M.F. and Seleem, M.N. Efficacy of short novel antimicrobial and anti-inflammatory peptides in a mouse model of methicillin-resistant *Staphylococcus aureus* (MRSA) skin infection. *Drug Des. Devel. Ther.* **8**, 1979-1983 (2014).

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