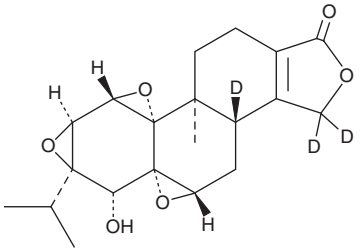
PRODUCT INFORMATION

Triptolide-d_3

Item No. 34895

Formal Name:	3bS,4,4aS,6R,6aR,7aS,7bS,8bS,9,10-decahydro-6-hydroxy-8b-methyl-6a-(1-methylethyl)-trisoxireno[4b,5aS:6,7:8aS,9]phenanthro[1,2-c]furan-1(3H)-one-d_3
MF:	$C_{20}H_{21}D_3O_6$
FW:	363.4
Chemical Purity:	≥90% (Triptolide)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_3); ≤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

Triptolide-d_3 is intended for use as an internal standard for the quantification of triptolide (Item No. 11973) 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).

Triptolide-d_3 is supplied as a solid. A stock solution may be made by dissolving the triptolide-d_3 in the solvent of choice, which should be purged with an inert gas. Triptolide-d_3 is slightly soluble in methanol (warmed) and DMSO.

Description

Triptolide is a diterpenoid triepoxide that has been found in *T. wilfordii* and has diverse biological activities.[1-4] It inhibits dCTP pyrophosphatase 1 (K_i = 168 µM), an enzyme that prevents halogenated nucleotides from entering DNA synthesis.[1] It reduces viability of A549, H1299, NCI H520, NCI H1650, and H1975 human non-small cell lung cancer (NSCLC) cells when used at a concentration of 50 nM.[2] Intranasal administration of liposomes containing triptolide (0.4 mg/kg) reduces tumor growth in a rat orthotopic model of lung cancer. Triptolide (0.2 mg/kg) reduces intestinal inflammation and prevents colon shortening in a mouse model of ulcerative colitis induced by dextran sulfate (Item No. 23250).[3] It also inhibits skin allograft rejection and increases graft survival time in mice when administered at a dose of 0.1 mg/kg per day post-transplantation.[4]

References

1. Corson, T.W., Cavga, H., Aberle, N., *et al.* Triptolide directly inhibits dCTP pyrophosphatase. *ChemBioChem* **12(11)**, 1767-1773 (2011).
2. Song, J.M., Molla, K., Anandharaj, A., *et al.* Triptolide suppresses the *in vitro* and *in vivo* growth of lung cancer cells by targeting hyaluronan-CD44/RHAMM signaling. *Oncotarget.* **8(16)**, 26927-26940 (2017).
3. Tang, B., Zhu, J., Zhang, B., *et al.* Therapeutic potential of triptolide as an anti-inflammatory agent in dextran sulfate sodium-induced murine experimental colitis. *Front. Immunol.* **11**, 592084 (2020).
4. Yang, S.-X., Gao, H.-L., Xie, S.-S., *et al.* Immunosuppression of triptolide and its effect on skin allograft survival. *Int. J. Immunopharmacol.* **14(6)**, 963-969 (1992).

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