PRODUCT INFORMATION



(±)-Thalidomide-d₄

Item No. 29450

CAS Registry No.:	1219177-18-0	
Formal Name:	2-(2,6-dioxo-3-piperidinyl)-1H-	
	isoindole-1,3(2H)-dione-4,5,6,7-d ₄	
Synonym:	N-Phthaloylglutamimide- d_4	
MF:	$C_{13}H_6D_4N_2O_4$	
FW:	262.3	
Chemical Purity:	≥98% ((±)-Thalidomide)	
Deuterium		
Incorporation:	≥99% deuterated forms (d ₁ -d ₄); ≤1% d ₀	
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

(±)-Thalidomide- d_4 is intended for use as an internal standard for the quantification of (±)-thalidomide (Item No. 14610) 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).

(±)-Thalidomide- d_4 is supplied as a solid. A stock solution may be made by dissolving the (±)-thalidomide- d_4 in the solvent of choice, which should be purged with an inert gas. (±)-Thalidomide-d₄ is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of (±)-thalidomide- d_A in these solvents is approximately 12 mg/ml.

Description

(±)-Thalidomide- d_{1} is intended for use as an internal standard for the quantification of (±)-thalidomide (Item No. 14610) by GC- or LC-MS. (±)-Thalidomide is an immunomodulatory compound with diverse biological activities, including anticancer, anti-inflammatory, and teratogenic properties.¹⁻³ It prevents polymorphonuclear leukocyte (PMN) chemotaxis when used at concentrations of 1, 10, and 100 μ g/ml.¹ (±)-Thalidomide increases IL-2-induced proliferation and IFN-γ production in primary human T cells in vitro.² It enhances natural killer (NK) cell-mediated cytotoxicity in MM.1S multiple myeloma cells.³ Thalidomide (4 mg/animal) reduces lung IL-6, TGF- β , VEGF, angiopoietin-1, angiopoietin-2, and collagen type I α 1 expression, inhibits pulmonary angiogenesis, and attenuates fibrosis in a mouse model of bleomycin-induced pulmonary fibrosis.⁴ It induces apoptosis in primary human embryonic fibroblasts (EC₅₀ = 8.9 µM) and induces limb and eye defects in chicken embryos (EC₅₀ = 50 μ g/kg egg weight).⁵ Formulations containing thalidomide have been used in the treatment of multiple myeloma and erythema nodosum leprosum (ENL) in non-pregnant individuals.

References

- 1. Faure, M., Thivolet, J., and Gaucherand, M. Arch. Dermatol. Res. 269(3), 275-280 (1980).
- Haslett, P.A., Corral, L.G., Albert, M., et al. J. Exp. Med. 187(11), 1885-1892 (1998).
- Davies, F.E., Raje, N., Hideshima, T., et al. Blood 98(1), 210-216 (2001). 3.
- 4. Tabata, C., Tabata, R., Kadokawa, Y., et al. J. Immunol. 179(1), 708-714 (2007).
- 5. Knobloch, J., Shaughnessy, J.D., Jr., and Rüther, U. FASEB J. 21(7), 1410-1421 (2007).

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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