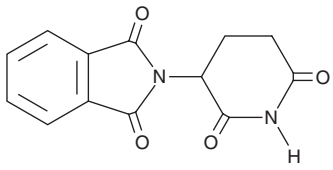
PRODUCT INFORMATION

(±)-Thalidomide

Item No. 14610

CAS Registry No.: 50-35-1
Formal Name: 2-(2,6-dioxo-3-piperidinyl)-1H-isoindole-1,3(2H)-dione
Synonyms: N-Phthaloylglutamimide, NSC 66847, NSC 527179
MF: $C_{13}H_{10}N_2O_4$
FW: 258.2
Purity: ≥98%
UV/Vis.: λ_{max}: 218, 240, 294 nm
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 is supplied as a solid. A stock solution may be made by dissolving the (±)-thalidomide in the solvent of choice, which should be purged with an inert gas. (±)-Thalidomide is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of (±)-thalidomide in these solvents is approximately 12 mg/ml.

(±)-Thalidomide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (±)-thalidomide should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. (±)-Thalidomide has a solubility of approximately 0.11 mg/ml in a 1:8 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

(±)-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 µg/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 Iα1 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 (EC_{50} = 8.9 µM) and induces limb and eye defects in chicken embryos (EC_{50} = 50 µg/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).
2. Haslett, P.A., Corral, L.G., Albert, M., *et al. J. Exp. Med.* **187(11)**, 1885-1892 (1998).
3. Davies, F.E., Raje, N., Hideshima, T., *et al. Blood* **98(1)**, 210-216 (2001).
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).

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