

Lenalidomide (hydrochloride)

Catalog No: tcsc1589



Available Sizes

Size: 100mg

Size: 500mg

Size: 1g



Specifications

CAS No:

1243329-97-6

Formula:

$C_{13}H_{14}ClN_3O_3$

Pathway:

Apoptosis

Target:

TNF Receptor

Purity / Grade:

>98%

Solubility:

10 mM in DMSO

Alternative Names:

CC-5013 hydrochloride

Observed Molecular Weight:

295.72

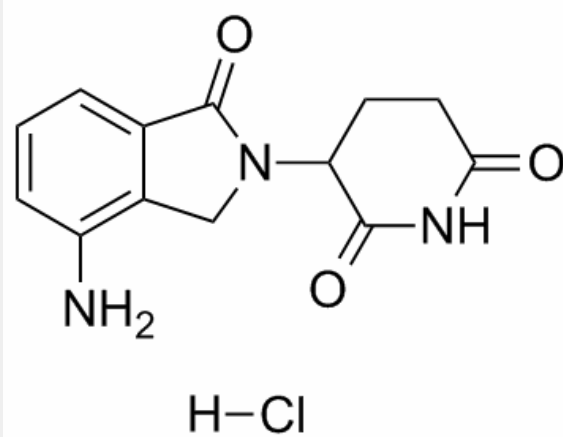
Product Description

Lenalidomide hydrochloride is a potent inhibitor of **TNF- α** and has antiangiogenic effect. Lenalidomide functions as a protein homeostatic modulator (PHM) linking casein kinase 1A1 (CK1 α) to the human E3 ligase cereblon.

IC50 & Target: TNF- α ^[1]

In Vitro: Lenalidomide is potent in stimulating T cell proliferation and IFN- γ and IL-2 production. Lenalidomide has been shown to inhibit production of pro inflammatory cytokines TNF- α , IL-1, IL-6, IL-12 and elevate the production of anti-inflammatory cytokine IL-10 from human PBMCs. Lenalidomide downregulates the production of IL-6 directly and also by inhibiting multiple myeloma (MM) cells and bone marrow stromal cells (BMSC) interaction, which augments the apoptosis of myeloma cells^[2]. Dose-dependent interaction with the CRBN-DDB1 complex is observed with Thalidomide, Lenalidomide and Pomalidomide, with IC₅₀ values of $\sim 30 \mu\text{M}$, $\sim 3 \mu\text{M}$ and $\sim 3 \mu\text{M}$, respectively, These reduced CRBN expression cells (U266-CRBN₆₀ and U266-CRBN₇₅) are less responsive than the parental cells to antiproliferative effects Lenalidomide across a dose-response range of 0.01 to $10 \mu\text{M}$ ^[3]. Lenalidomide, a thalidomide analog, functions as a molecular glue between the human E3 ubiquitin ligase cereblon and CK1 α is shown to induce the ubiquitination and degradation of this kinase, thus presumably killing leukemic cells by p53 activation^[5].

In Vivo: The toxicity of Lenalidomide doses up to 15, 22.5, and 45 mg/kg via IV, IP, and PO routes of administration. Limited by solubility in our PBS dosing vehicle, these maximum achievable Lenalidomide doses are well tolerated with the exception of one mouse death (of four total dosed) at the 15 mg/kg IV dose. Notably, no other toxicities are observed in the study at IV doses of 15 mg/kg (n=3) or 10 mg/kg (n=45) or at any other dose level through IV, IP, and PO routes^[4].



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