

Product Data Sheet

Product Name: OD 36 hydrochloride

Cat. No.: GC50517

Chemical Properties

Cas. No. 1638644-62-8

SMILES C1C=CC(C2=C3N=C(NCCOCCO4)C=CN3N=C2)=CC4=C1.Cl

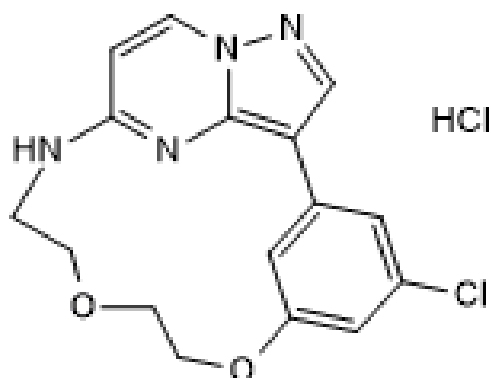
Formula $C_{16}H_{15}ClN_4O_2 \cdot HCl$ M.Wt 367.23

Solubility DMSO : 33.33 mg/mL (100.76 mM; ultrasonic and warming and heat to 60°C) Storage Store at 2-8°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines ATDC5 cells

Caution: Product has not been fully validated for medical applications. For research use only.

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ATDC5 cells were transduced with the same titer of adenoviral particles in the presence of Polybrene (4mg/ml), encoding for either the ALK2wt-HA or ALK2R206H-HA. ATDC5 cells were trypsinized and washed once with PBS.

There were 3×10^5 cells counted per micromass, and resuspended in 10 μ l of culture medium. Very carefully, 100- μ l drops were deposited in the center of the well in a 24-wells plate and placed in the incubator for 2 hours. Next 500 μ l of

Preparation Method DMEM-F12 5% fetal bovine serum (FBS) containing $1 \times$ ITS were carefully added to the wells. After 24 hours, the medium was replaced by DMEM-F12 5% FBS containing $1 \times$ ITS, supplemented with activin A (100ng/ml), and DMSO, LDN-193189, OD 36 hydrochloride, or OD52 (0.5 μ M). The cells were incubated for 21 days before further analysis, refreshing the medium every 5 days. Finally, the cells were washed and pictures acquired using a microscope with 10 $\times$ magnification.

Reaction
Conditions 0.5 μ M; 21 days

Applications OD 36 hydrochloride treatment significantly inhibited the osteogenic and chondrogenic differentiation induced by activin A in ATDC5 cells expressing mutant R206H ALK2.

Animal experiment [2]:

Animal models C57BL/6 mice

C57BL/6 mice were housed in an air-conditioned room with a 12h light/dark cycle and received standard laboratory rat chow and tap water. Rats were allowed 7 days to adjust to their new environment. C57BL/6 mice were given Preparation Method vehicle or 6.25mg/kg of Gefitinib or OD 36 hydrochloride intraperitoneal in a 500 μ l volume. Thirty minutes later, mice were injected with 150 μ g of MDP intraperitoneal. Four hours later, mice were sacrificed and a peritoneal lavage using 5ml of PBS was performed.

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Dosage form 6.25mg/kg for once; i.p.

Applications OD 36 hydrochloride treatment reduced the cell infiltration in a muramyl dipeptide (MDP)-induced peritonitis mouse model.

References:

- [1] Sánchez Duffhues G, Williams E, Benderitter P, et al. Development of Macrocyclic Kinase Inhibitors for ALK2 Using Fibrodysplasia Ossificans Progressiva Derived Endothelial Cells[J]. Journal of Bone and Mineral Research Plus, 2019, 3(11): e10230.
- [2] Tigno-Aranjuez J T, Benderitter P, Rombouts F, et al. In vivo inhibition of RIPK2 kinase alleviates inflammatory disease[J]. Journal of Biological Chemistry, 2014, 289(43): 29651-29664.

Background

OD 36 hydrochloride is a potent inhibitor of RIPK2 kinase with an IC₅₀ value of 5.3nM [1]. OD 36 hydrochloride mimics the interaction between the ATP adenine ring and the hinge region of RIPK2 KD, and utilizes the interaction between the cyclic linker group and the hydrophobic posterior pocket as well as the ribose binding region, thereby enhancing the affinity and selectivity for RIPK2[2]. OD 36 hydrochloride has been widely used in mouse peritonitis models to alleviate inflammation[3].

In vitro, OD 36 hydrochloride treatment (0.5μM) for 21 days significantly inhibited the osteogenic and chondrogenic differentiation induced by activin A in ATDC5 cells expressing mutant R206H ALK2 [4]. The 5.3nM OD 36 hydrochloride treatment for 24 hours significantly inhibited the invasion and metastasis of K7M2 cells promoted by macrophages[5].

In vivo, OD 36 hydrochloride treatment via intraperitoneal injection at a single dose of 6.25mg/kg can reduce the cell infiltration in a muramyl dipeptide (MDP)-induced peritonitis mouse model [6].

References:

- [1] Shen S, Lu C, Ling T, et al. Current advances on RIPK2 and its inhibitors in pathological processes: a comprehensive review[J]. Frontiers in Molecular Neuroscience, 2025, 18: 1492807.
- [2] Pham A T, Ghilardi A F, Sun L. Recent advances in the development of RIPK2 modulators for the

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treatment of inflammatory diseases[J]. *Frontiers in pharmacology*, 2023, 14: 1127722.

[3] You J, Wang Y, Chen H, et al. RIPK2: a promising target for cancer treatment[J]. *Frontiers in pharmacology*, 2023, 14: 1192970.

[4] Sánchez Duffhues G, Williams E, Benderitter P, et al. Development of Macrocyclic Kinase Inhibitors for ALK2 Using Fibrodysplasia Ossificans Progressiva Derived Endothelial Cells[J]. *Journal of Bone and Mineral Research Plus*, 2019, 3(11): e10230.

[5] Maloney C, Kallis M P, Edelman M, et al. Gefitinib inhibits invasion and metastasis of osteosarcoma via inhibition of macrophage receptor interacting serine-threonine kinase 2[J]. *Molecular cancer therapeutics*, 2020, 19(6): 1340-1350.

[6] Tigno-Aranjuez J T, Benderitter P, Rombouts F, et al. In vivo inhibition of RIPK2 kinase alleviates inflammatory disease[J]. *Journal of Biological Chemistry*, 2014, 289(43): 29651-29664.

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