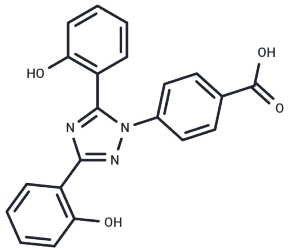
Data Sheet (Cat.No.T1457)

TargetMol

Deferasirox

Chemical Properties



CAS No. : 201530-41-8

Formula: C21H15N3O4

Molecular Weight: 373.36

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Deferasirox (CGP-72670) is an oral iron chelating agent used to treat chronic iron overload.
Targets(IC50)	Ferroptosis,Antibacterial
In vitro	Orally administered Deferasirox in rats achieves an absorption rate of at least 75% with a bioavailability of 26%. Monotherapy with Deferasirox modestly increases the survival time in IPA mice. When administered, either intravenously or orally, Deferasirox mainly circulates in the blood as its unaltered form and its iron complex, with a 99.2% binding rate to plasma proteins. Deferasirox significantly enhances survival rates and reduces tissue fungal burden in mice with diabetic ketoacidosis or neutropenia suffering from mucormycosis, showing effects comparable to those of liposomal Amphotericin B. Additionally, Deferasirox bolsters the host inflammatory response against mucormycosis. The combined use of Deferasirox and liposomal Amphotericin B synergistically improves survival rates and decreases fungal load in tissues affected by mucormycosis.
In vivo	Deferasirox exhibits antifungal activity against Aspergillus with MIC (Minimum Inhibitory Concentration) and MFC (Minimum Fungicidal Concentration) values of 25 and 50 mg/L, respectively. It effectively chelates iron ions from Rhizopus species, showing antiviral activity in vitro against 28 out of 29 Mucorales clinical isolates at concentrations much lower than those achievable in clinical serum levels. Deferasirox significantly inhibits the activity of NF-κB by chelating its active subunit p65 in an inactive form within the cytoplasm in 28 out of 40 peripheral blood samples. Additionally, it inhibits three human myeloid cell lines (K562, U937, and HL60) with IC50 values ranging from 17 to 50 mM.
Cell Research	Deferasirox is dissolved in DMSO. HL-60 or KG-1 cells are treated with 0, 5, 10, 50 μM of deferasirox for 24 or 48 h, and proliferation is determined by an MTT assay[2].

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 240 mg/mL (642.81 mM),Sonication is recommended. Ethanol: 2 mg/mL (5.36 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (5.36 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6784 mL	13.3919 mL	26.7838 mL
5 mM	0.5357 mL	2.6784 mL	5.3568 mL
10 mM	0.2678 mL	1.3392 mL	2.6784 mL
50 mM	0.0536 mL	0.2678 mL	0.5357 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Ibrahim AS, et al. J Clin Invest, 2007, 117(9), 2649-2657.
Cui P, Liu T, Sheng Y, et al.Identification and validation of ferroptosis-related lncRNAs signature in intervertebral disc degeneration.Gene.2024: 148381.
Messa E, et al. Haematologica, 2010, 95(8), 1308-1316.
Ohyashiki JH, et al. Cancer Sci, 2009, 100(5), 970-977.
Bruin GJ, et al. Drug Metab Dispos, 2008, 36(12), 2523-2538.
Ibrahim AS, et al. J Antimicrob Chemother, 2010, 65(2), 289-292.
Sobbe A, et al. Inconsistent hepatic antifibrotic effects with the iron chelator deferasirox. J Gastroenterol Hepatol. 2015 Mar;30(3):638-45.