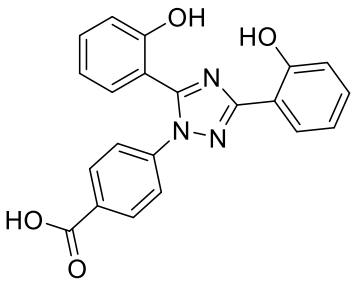
Product data sheet

MedKoo Cat#: 317140 Name: Deferasirox CAS#: 201530-41-8 Chemical Formula: $C_{21}H_{15}N_3O_4$ Exact Mass: 373.10626 Molecular Weight: 373.37	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Deferasirox is an oral iron chelator. Its main use is to reduce chronic iron overload in patients who are receiving long-term blood transfusions for conditions such as beta-thalassemia and other chronic anemias. It was approved by the United States Food and Drug Administration (FDA) in November 2005. Deferasirox seems to be capable of removing iron from cells (cardiac myocytes and hepatocytes) as well as removing iron from the blood.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	74	198.20
Ethanol	15	40.18

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.68 mL	13.39 mL	26.78 mL
5 mM	0.54 mL	2.68 mL	5.36 mL
10 mM	0.27 mL	1.34 mL	2.68 mL
50 mM	0.05 mL	0.27 mL	0.54 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Sobbe A, Bridle KR, Jaskowski L, de Guzman CE, Santrampurwala N, Clouston AD, Campbell CM, Subramaniam VN, Crawford DH. Inconsistent hepatic antifibrotic effects with the iron chelator deferasirox. J Gastroenterol Hepatol. 2015 Mar;30(3):638-45. doi: 10.1111/jgh.12720. PMID: 25168203.

In vivo study

1. Lee DH, Jang PS, Chung NG, Cho B, Jeong DC, Kim HK. Deferasirox shows in vitro and in vivo antileukemic effects on murine leukemic cell lines regardless of iron status. Exp Hematol. 2013 Jun;41(6):539-46. doi: 10.1016/j.exphem.2013.02.004. Epub 2013 Feb 13. PMID: 23415674.

2. Sobbe A, Bridle KR, Jaskowski L, de Guzman CE, Santrampurwala N, Clouston AD, Campbell CM, Subramaniam VN, Crawford DH. Inconsistent hepatic antifibrotic effects with the iron chelator deferasirox. J Gastroenterol Hepatol. 2015 Mar;30(3):638-45. doi: 10.1111/jgh.12720. PMID: 25168203.

7. Bioactivity

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Biological target:

Deferasirox (ICL 670) is an orally available iron chelator used for the management of transfusional iron overload.

In vitro activity

In LX-2 cells treated with 50 μM deferasirox for 12 h, α1(I)procollagen expression was decreased by 25%, with maximal reductions (10-fold) seen following 24-120 h of treatment. Similarly, α-smooth muscle actin (αSMA) expression was significantly lower. Alterations in matrix remodeling genes, specifically decreased expression of matrix metalloproteinase-2 and tissue inhibitor of metalloproteinase-2, were observed.

Reference: J Gastroenterol Hepatol. 2015 Mar;30(3):638-45. https://doi.org/10.1111/jgh.12720

In vivo activity

To further study the in vivo antitumor activity of deferasirox (DFX) on tumor growth according to iron control, two mouse models were used (with or without SIO) bearing L1210 leukemic cells. In the first experiment, non-SIO mice were injected subcutaneously with L1210 cells. After 21 days of inoculation, non-SIO mice received PBS alone or ICAs according to the experimental design. The mice treated with DFX showed longer survival than the other groups ($p = 0.017$; Fig. 5). The initial size difference between tumors was large, preventing a meaningful statistical comparison of final tumor size (data not shown). The second experiment was performed with SIO mice. After 28 days of subcutaneous injection with L1210, the treatment for each mouse group was initiated. The SIO mice treated with DFX showed significantly longer survival than the SIO mice without treatment and the control mice ($p < 0.01$). The tumor size was significantly smaller in the SIO mice treated with DFX compared with the SIO mice without treatment and the control mice ($p < 0.01$).

Reference: Exp Hematol. 2013 Jun;41(6):539-46. https://linkinghub.elsevier.com/retrieve/pii/S0301-472X(13)00017-9

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.