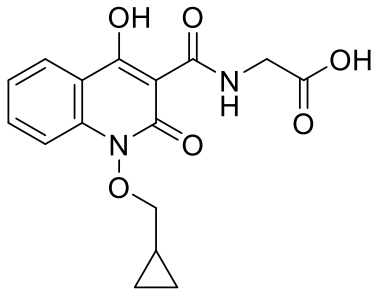
Product data sheet

MedKoo Cat#: 561109 Name: Desidustat CAS#: 1616690-16-4 Chemical Formula: $C_{16}H_{16}N_2O_6$ Exact Mass: 332.1008 Molecular Weight: 332.312	
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:
Desidustat is an antianaemic drug candidate

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	8.0	24.07
Ethanol	2.0	6.02

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.01 mL	15.05 mL	30.09 mL
5 mM	0.60 mL	3.01 mL	6.02 mL
10 mM	0.30 mL	1.50 mL	3.01 mL
50 mM	0.06 mL	0.30 mL	0.60 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

TBD

In vivo study

1. Jain M, Joharapurkar A, Patel V, Kshirsagar S, Sutariya B, Patel M, Patel H, Patel PR. Pharmacological inhibition of prolyl hydroxylase protects against inflammation-induced anemia via efficient erythropoiesis and hepcidin downregulation. Eur J Pharmacol. 2019 Jan 15;843:113-120. doi: 10.1016/j.ejphar.2018.11.023. Epub 2018 Nov 17. PMID: 30458168.
2. Joharapurkar AA, Patel VJ, Kshirsagar SG, Patel MS, Savsani HH, Jain MR. Prolyl hydroxylase inhibitor desidustat protects against acute and chronic kidney injury by reducing inflammatory cytokines and oxidative stress. Drug Dev Res. 2021 Jan 22. doi: 10.1002/ddr.21792. Epub ahead of print. PMID: 33480036.

7. Bioactivity
Biological target:

Desidustat is an inhibitor of HIF hydroxylase extracted from patent WO 2014102818 A1, compound example 2.

In vitro activity

TBD

Product data sheet

In vivo activity

In this study, the effect of desidustat on the inflammatory and fibrotic changes was investigated in preclinical models of acute and chronic kidney injury. Acute kidney injury was induced in male Sprague Dawley rats by ischemia-reperfusion, in which effect of desidustat (15 mg/kg, PO) was estimated. In a separate experiment, male C57 mice were treated with adenine for 14 days to induce CKD. These mice were treated with desidustat (15 mg/kg, PO, alternate day) treatment for 14 days, with adenine continued. Desidustat prevented elevation of serum creatinine, urea, IL-1β, IL-6, and kidney injury molecule-1 (KIM-1), and elevated the erythropoietin levels in rats that were subjected to acute kidney injury. Mice treated with adenine developed CKD and anemia, and desidustat treatment caused improvement in serum creatinine, urea, and also improved hemoglobin and reduced hepatic and serum hepcidin. A significant reduction in IL-1β, IL-6, myeloperoxidase (MPO) and oxidative stress was observed by desidustat treatment. Desidustat treatment also reduced renal fibrosis as observed by histological analysis and hydroxyproline content. Desidustat treatment reduced the renal fibrosis and inflammation along with a reduction in anemia in preclinical models of kidney injury, which may translate to protective effects in CKD patients.

Reference: Drug Dev Res. 2021 Jan 22. https://pubmed.ncbi.nlm.nih.gov/33480036/