

# Product data sheet



MedKoo Cat#: 529537 Name: Hemin CAS: 16009-13-5 Chemical Formula: $C_{34}H_{32}FeN_4O_4^+$ Exact Mass: 616.1767 Molecular Weight: 616.4985		
Product supplied as:	Powder	
Purity (by HPLC):	$\geq 98\%$	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: $-20^\circ\text{C}$ 3 years; $4^\circ\text{C}$ 2 years. In solvent: $-80^\circ\text{C}$ 3 months; $-20^\circ\text{C}$ 2 weeks.	

## 1. Product description:

Hemin is an iron-containing porphyrin potentially for the treatment of gastroparesis.

## 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	17.33	28.11
Water	0.1	0.16

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.62 mL	8.11 mL	16.22 mL
5 mM	0.32 mL	1.62 mL	3.24 mL
10 mM	0.16 mL	0.81 mL	1.62 mL
50 mM	0.03 mL	0.16 mL	0.32 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

- Sahoo N, Yang K, Coburger I, Bernert A, Swain SM, Gessner G, Kappl R, Kühl T, Imhof D, Hoshi T, Schönherr R, Heinemann SH. Intracellular hemin is a potent inhibitor of the voltage-gated potassium channel Kv10.1. *Sci Rep.* 2022 Aug 27;12(1):14645. doi: 10.1038/s41598-022-18975-2. PMID: 36030326; PMCID: PMC9420133.
- Kim DH, Ahn HS, Go HJ, Kim DY, Kim JH, Lee JB, Park SY, Song CS, Lee SW, Ha SD, Choi C, Choi IS. Hemin as a novel candidate for treating COVID-19 via heme oxygenase-1 induction. *Sci Rep.* 2021 Nov 2;11(1):21462. doi: 10.1038/s41598-021-01054-3. PMID: 34728736; PMCID: PMC8563742.

### In vivo study

- Silva I, Correia R, Pinto R, Mateus V. Hemin Ameliorates the Inflammatory Activity in the Inflammatory Bowel Disease: A Non-Clinical Study in Rodents. *Biomedicines.* 2022 Aug 19;10(8):2025. doi: 10.3390/biomedicines10082025. PMID: 36009572; PMCID: PMC9405605.
- Szkudelski T, Frąckowiak K, Szkudelska K. Hemin attenuates response of primary rat adipocytes to adrenergic stimulation. *PeerJ.* 2021 Sep 2;9:e12092. doi: 10.7717/peerj.12092. PMID: 34557353; PMCID: PMC8418796.

## 7. Bioactivity

Biological target:

Hemin is an Heme oxygenase (HO)-1 inducer.

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## In vitro activity

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The effects in the post-treatment group infected with the virus and then treated with hemin for 2 hpi were monitored to determine whether viral replication was suppressed during the intracellular replication stage after viral entry into the cells. The suppression of viral replication was observed in both groups, indicating that hemin treatment could inhibit the virus at the intracellular replication stage (Fig. 1d). The immunofluorescence assay (IFA) (Fig. 1e) showed that the number of cells containing the SARS-CoV-2 spike protein decreased as the hemin concentration increased at 24 hpi.

Reference: Sci Rep. 2021 Nov 2;11(1):21462. <https://pubmed.ncbi.nlm.nih.gov/34728736/>

## In vivo activity

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The hepatic function was evaluated based on the ALT concentration in the plasma of the mice in all of the experimental groups (Figure 7). The TNBS group showed the highest concentration of ALT ( $30.88 \pm 4.64$  U/L). The treatment with hemin at both dosages, 5 mg/kg/day and 10 mg/kg/day, promotes a decrease in ALT levels with statistical significance compared to the TNBS group ( $20.33 \pm 3.67$  U/L;  $p < 0.001$  and  $22.56 \pm 3.61$  U/L;  $p < 0.01$ , respectively).

Reference: Biomedicines. 2022 Aug 19;10(8):2025. <https://pubmed.ncbi.nlm.nih.gov/36009572/>

*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.*