Ferric citrate

Cat. No.: HY-N1428C

CAS No.: 3522-50-7

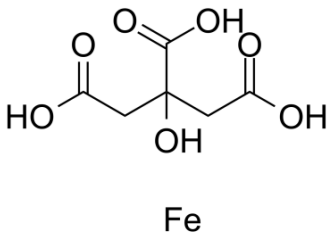
Molecular Formula: $C_6H_5FeO_7$

Molecular Weight: 244.94

Target: Reactive Oxygen Species

Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



SOLVENT & SOLUBILITY

In Vitro

H_2O : 5 mg/mL (20.41 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.0826 mL	20.4132 mL	40.8263 mL
	5 mM	0.8165 mL	4.0826 mL	8.1653 mL
	10 mM	0.4083 mL	2.0413 mL	4.0826 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Ferric citrate (Iron(III) citrate), an orally active iron supplement, is an efficacious phosphate binder. Ferric citratee can be used for iron deficiency anemia and chronic kidney disease (CKD) research.

In Vitro

Ferric citrate (Iron(III) citrate; 1 mM; 24 hours) significantly induces CM cell death[1].

Ferric citrate (Iron(III) citrate; 0.1 mM, 1 mM, 2 mM; 24 hours) increases ROS generation in cardiomyocyte (CM) cells in a dose-dependent manner[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	Cardiomyocyte (CM) cells
Concentration:	1 mM
Incubation Time:	24 hours
Result:	Significantly induced CM cell death.

In Vivo	Here we compared the effects of Ferric citrate (25 μg/g) administration versus a mineral sufficient control diet using the Col4a3 knockout mouse model of progressive CKD and age-matched wild-type mice. Ferric citrate is given to knockout mice for four weeks beginning at six weeks of age when they had overt chronic kidney disease (CKD), or for six weeks beginning at four weeks of age when they had early CKD. Ferric citrate rescues iron deficiency and anemia in knockout mice regardless of the timing of treatment initiation, and circulating levels and bone expression of FGF23 are reduced. Ferric citrate also improves cardiac function and significantly improves survival[3]. Ferric citrate is an efficacious and safe phosphate binder that increases iron stores and reduces intravenous iron and erythropoietin-stimulating agent use while maintaining hemoglobin. Ferric citrate can increase transferrin saturation, serum ferritin, and hemoglobin[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Yuichi Baba, et al. Protective effects of the mechanistic target of rapamycin against excess iron and ferroptosis in cardiomyocytes. Am J Physiol Heart Circ Physiol. 2018 Mar 1;314(3):H659-H668.

[2]. Julia B Lewis, et al. Ferric citrate controls phosphorus and delivers iron in patients on dialysis. J Am Soc Nephrol. 2015 Feb;26(2):493-503.

[3]. Connor Francis, et al. Ferric citrate reduces fibroblast growth factor 23 levels and improves renal and cardiac function in a mouse model of chronic kidney disease. Kidney Int. 2019 Dec;96(6):1346-1358.

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