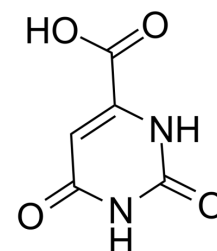


## Orotic acid zinc

<b>Cat. No.:</b>	HY-N0157A
<b>CAS No.:</b>	68399-76-8
<b>Molecular Formula:</b>	C <sub>5</sub> H <sub>4</sub> N <sub>2</sub> O <sub>4</sub> Zn <sub>0.5</sub>
<b>Molecular Weight:</b>	188.79
<b>Target:</b>	Endogenous Metabolite; Nucleoside Antimetabolite/Analog
<b>Pathway:</b>	Metabolic Enzyme/Protease; Cell Cycle/DNA Damage
<b>Storage:</b>	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



0.5Zn

### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 20 mg/mL (105.94 mM); ultrasonic and adjust pH to 2 with 1 M HCL)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	5.2969 mL	26.4845 mL	52.9689 mL
	5 mM	1.0594 mL	5.2969 mL	10.5938 mL
	10 mM	0.5297 mL	2.6484 mL	5.2969 mL

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

### BIOLOGICAL ACTIVITY

#### Description

Orotic acid (zinc), a precursor in biosynthesis of pyrimidine nucleotides and RNA, is released from the mitochondrial dihydroorotate dehydrogenase (DHODH) for conversion to UMP by the cytoplasmic UMP synthase enzyme. Orotic acid (zinc) is a marker for measurement in routine newborn screening for urea cycle disorders. Orotic acid (zinc) can induce hepatic steatosis and hepatomegaly in rats<sup>[1][2][3]</sup>.

#### In Vitro

Orotic acid is found in milk and dairy products, and it is converted to uridine for use in the pyrimidine salvage pathway predominantly in liver, kidney and erythrocytes<sup>[2]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

Orotic acid is a marker for measurement of urea cycle disorders (UCDs), including ornithine transcarbamylase deficiency (OTCD)<sup>[2]</sup>.  
Orotic acid (1.0% addition to the diet; p.o. for 3-10 d) induces a development of fatty liver by day 7, and decreases purine/pyrimidine ratio of hepatic acid-soluble nucleotides by day 3<sup>[3]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## CUSTOMER VALIDATION

- J Mol Med (Berl). 2019 Aug;97(8):1183-1193.

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## REFERENCES

- [1]. Löffler M, et, al. Orotate (orotic acid): An essential and versatile molecule. Nucleosides Nucleotides Nucleic Acids.
  - [2]. Staretz-Chacham O, et, al. The role of orotic acid measurement in routine newborn screening for urea cycle disorders. J Inherit Metab Dis. 2020 Nov 15.
  - [3]. Durschlag RP, et, al. Orotic acid-induced metabolic changes in the rat. J Nutr. 1980 Apr;110(4):816-21.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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