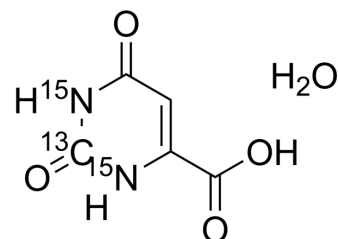


Orotic acid-¹³C,¹⁵N₂ monohydrate

Cat. No.:	HY-N0157S1
CAS No.:	1346602-15-0
Molecular Formula:	C ₄ ¹³ C ₆ ¹⁵ N ₂ O ₅
Molecular Weight:	177.09
Target:	Nucleoside Antimetabolite/Analog; Endogenous Metabolite
Pathway:	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Orotic acid- ¹³ C, ¹⁵ N ₂ (monohydrate) is the ¹³ C and ¹⁵ N labeled Orotic acid[1]. Orotic acid (6-Carboxyuracil), 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 is a marker for measurement in routine newborn screening for urea cycle disorders. Orotic acid can induce hepatic steatosis and hepatomegaly in rats[2][3][4].
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019 Feb;53(2):211-216.
- [2]. Löffler M, et al. Orotate (orotic acid): An essential and versatile molecule. *Nucleosides Nucleotides Nucleic Acids*.
- [3]. 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.
- [4]. Durschlag RP, et al. Orotic acid-induced metabolic changes in the rat. *J Nutr*. 1980 Apr;110(4):816-21.

Caution: Product has not been fully validated for medical applications. For research use only.

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