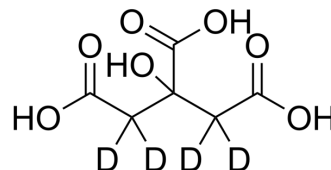


## Citric acid-d<sub>4</sub>

<b>Cat. No.:</b>	HY-N1428S
<b>CAS No.:</b>	147664-83-3
<b>Molecular Formula:</b>	C <sub>6</sub> H <sub>4</sub> D <sub>4</sub> O <sub>7</sub>
<b>Molecular Weight:</b>	196.15
<b>Target:</b>	Apoptosis; Bacterial; Endogenous Metabolite; Antibiotic
<b>Pathway:</b>	Apoptosis; Anti-infection; Metabolic Enzyme/Protease
<b>Storage:</b>	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



### BIOLOGICAL ACTIVITY

<b>Description</b>	Citric acid-d <sub>4</sub> is the deuterium labeled Citric acid. Citric acid is a weak organic tricarboxylic acid found in citrus fruits. Citric acid is a natural preservative and food tartness enhancer.
<b>In Vitro</b>	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 <sup>[1]</sup> . 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;53(2):211-216.
- [2]. Ying TH, et al. Citric acid induces cell-cycle arrest and apoptosis of human immortalized keratinocyte cell line (HaCaT) via caspase- and mitochondrial-dependent signaling pathways. *Anticancer Res.* 2013 Oct;33(10):4411-20.
- [3]. Abdel-Salam OM, et al. Citric acid effects on brain and liver oxidative stress in lipopolysaccharide-treated mice. *J Med Food.* 2014 May;17(5):588-98.
- [4]. Lacour B, et al. Stimulation by citric acid of calcium and phosphorus bioavailability in rats fed a calcium-rich diet. *Miner Electrolyte Metab.* 1997;23(2):79-87.
- [5]. Nagai R, et al. Citric acid inhibits development of cataracts, proteinuria and ketosis in streptozotocin (type 1) diabetic rats. *Biochem Biophys Res Commun.* 2010 Feb 26;393(1):118-22.

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

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