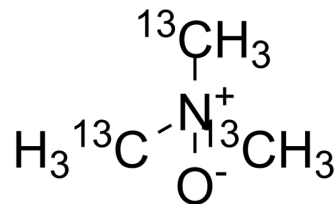


## Trimethylamine-N-oxide-13C3

<b>Cat. No.:</b>	HY-116084S1
<b>Molecular Formula:</b>	$^{13}\text{C}_3\text{H}_9\text{NO}$
<b>Molecular Weight:</b>	78.09
<b>Target:</b>	NOD-like Receptor (NLR); Reactive Oxygen Species; TGF-beta/Smad; Endogenous Metabolite
<b>Pathway:</b>	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Stem Cell/Wnt; TGF-beta/Smad
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Trimethylamine-N-oxide-13C3 is the 13C-labeled Trimethylamine N-oxide. Trimethylamine N-oxide is a gut microbe-dependent metabolite of dietary choline and other trimethylamine-containing nutrients. Trimethylamine N-oxide induces inflammation by activating the ROS/NLRP3 inflammasome. Trimethylamine N-oxide also accelerates fibroblast-myofibroblast differentiation and induces cardiac fibrosis by activating the TGF-β/smad2 signaling pathway <sup>[1][2][3]</sup> .
<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]. Wei Shuai, et al. High-choline Diet Exacerbates Cardiac Dysfunction, Fibrosis, and Inflammation in a Mouse Model of Heart Failure With Preserved Ejection Fraction. *J Card Fail.* 2020 May 14;S1071-9164(19)31802-0.
- [3]. Wenlong Yang, et al. Gut Microbe-Derived Metabolite Trimethylamine N-oxide Accelerates Fibroblast-Myofibroblast Differentiation and Induces Cardiac Fibrosis. *J Mol Cell Cardiol.* 2019 Sep;134:119-130.
- [4]. Manuel T Velasquez, et al. Trimethylamine N-Oxide: The Good, the Bad and the Unknown. *Toxins (Basel).* 2016 Nov 8;8(11):326.

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

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