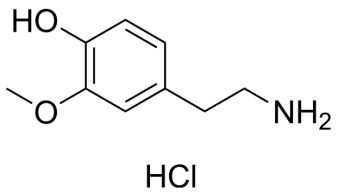
3-Methoxytyramine hydrochloride

Cat. No.:	HY-103638
CAS No.:	1477-68-5
Molecular Formula:	$C_9H_{14}ClNO_2$
Molecular Weight:	203.67
Target:	Drug Metabolite; Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	-20°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)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (490.99 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.9099 mL	24.5495 mL	49.0990 mL
5 mM	0.9820 mL	4.9099 mL	9.8198 mL
10 mM	0.4910 mL	2.4550 mL	4.9099 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (12.27 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (12.27 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.27 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

3-Methoxytyramine hydrochloride is an inactive metabolite of dopamine which can activate trace amine associated receptor 1 (TAAR1).

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

The intensity of the fluorescence developed is in a linear relation to the amount of 3-Methoxytyramine hydrochloride presented in the sample up to at least 1 μg. When a high concentration of dopamine is present in the reaction mixture, there

	is some reduction in the fluorescence derived from 3-Methoxytyramine hydrochloride[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The extracellular DA metabolite 3-Methoxytyramine hydrochloride (3-MT) induces significant behavioral activation in DDD mice. This activity however, is mostly presented as a set of disorganized abnormal movements that includes tremor, head bobbing, straub tail, grooming and abnormal orofacial movements rather than normal forward activity. No effect is observed when 3-Methoxytyramine hydrochloride is infused at doses below 9 μg, at 9 μg and higher doses 3-Methoxytyramine hydrochloride dose-dependently causes transient behavioral activation with a complex set of behaviors. In particular, transient hyperactivity and stereotypy, sniffing, grooming, rearing and mild abnormal involuntary movements (AIMs) at the level of limbs is observed after infusion of 9 μg of 3-Methoxytyramine hydrochloride. Similar behaviors are also observed after 18 μg of 3-Methoxytyramine hydrochloride with the additional appearance of tremor as well as oral and whole body AIMs[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	The rats are killed by cervical dislocation and the brains are removed and placed on an ice-cooled glass plate. The corpora striata are dissected out and homogenized immediately or stored at -17°C until analyzed. For the estimation of 3-Methoxytyramine hydrochloride 1 mL of the neutralized perchloric acid solution is placed in a glass test tube. One millilitre of a solution of potassium ferricyanide (20 μg/mL) in concentrated ammonium hydroxide is added. After 2 min 0 to 1 mL of a solution of cysteine (1 mg/mL) is added and mixed. The fluorescence of the resulting solution is measured in a spectrophotofluorometer fitted with an interference filter in the fluorescence light path. A blank determination is made by reversing the order of the addition of the ferricyanide-ammonia solution and the solution of cysteine. Authentic 3-Methoxytyramine hydrochloride is also added to a portion of the neutralized eluate and the fluorescence developed to check for quenching[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	To assess effects of 3-Methoxytyramine hydrochloride (3-MT) in normal and TAAR1-KO mice, the animals are placed in the locomotor activity chamber and 30 min later various doses of 3-Methoxytyramine hydrochloride are administered i.c.v.. To perform i.c.v. administration in this paradigm, habituated mice are removed from the experimental chamber, briefly restrained, i.c.v. injection cannula is placed into the previously implanted (one week before) guide cannula and infusion of 3-Methoxytyramine hydrochloride or vehicle is performed for 4 minutes when animal is freely moving in a home cage. After infusion, animals are put back into experimental chamber and behavior is monitored for 90 min after administration[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Sotnikova TD, et al. The dopamine metabolite 3-methoxytyramine is a neuromodulator. PLoS One. 2010 Oct 18;5(10):e13452.

[2]. Guldberg HC, et al. Some observations on the estimation of 3-methoxytyramine in brain tissue. Br J Pharmacol. 1971 Aug;42(4):505-11.

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