

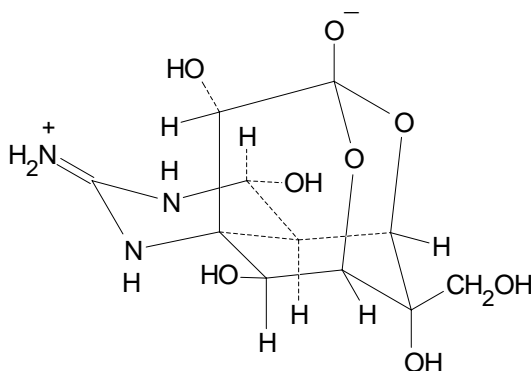


TECHNICAL DATA

TETRODOTOXIN (TTX) - citrate free - , Prod. No. L85 03,

a highly specific Na⁺ channel blocker in excitable tissues.

C₁₁H₁₇N₃O₈, from Fugu Fish organs.



Physical Form: white crystal powder.

Molecular Weight: 319.28.

Melting point: does not melt at 200 °C, darkens and turns black with increasing temperature.

Solubility: 2% acetic or citric acid, dilute sulfuric acid; slightly in dry alcohol and ether; insoluble in pure water and organic solvents.

Conditions of solubility: 10 nM in water with a drop (10 µl/1 ml) of TFA (trifluoroacetic acid) or acetic acid.

Biological activity:

K_D (cardiac myocytes in rats): 0.8 nM⁽²⁾.

~ 10⁻⁸ M block nervous system; ~ 10⁻⁵ M block heart muscle. The binding to Na⁺ channel is reversible.

ED₅₀ = 3.7 nM.

Purity: min. 96 %. (HPLC, IR, NMR)

Toxicity (LD₅₀):

mice (i.v.): 8.7 µg/kg.

mice (i.p.): 8 - 10 µg/kg.

mice (s.c.): 11.5 µg/kg.

Optical activity: $[\alpha]_D^{25} - 8.64^\circ$ (c = 8.55 in dilute acetic acid)

Storage and reconstitution recommendations:

stable at room temperature, store preferably at 4°C. Solid and solutions can be kept in deep freeze for a long time without any change in their activity.

Solution for use: reconstitute in sodium citrate (0.1 M) with a pH slightly acid or acetate buffer, pH 4-5.

A slightly acid solution enables to perform a stock solution at 1mM without difficulty. The final concentration of utilisation being in μM range, the dilution is suitable at 1/1000th.

Safety recommendations:

highly toxic.

CAS Reg. No: 4368-28-9

RTECS No. IO1450000

Merck Index 11th Ed., No. 9175

Bibliographic references:

1. Abraham et al. "Antiarrhythmic properties of tetrodotoxin against occlusion-induced arrhythmias in the rat: a novel approach to the study of the antiarrhythmic effects of ventricular sodium channel blockade." *J. Pharmacol. Exp. Ther.* **251(3)**:1166 (1989).
2. Lombet et al. "A cardiac tetrodotoxin binding component: biochemical identification, characterization and properties." *Biochemistry* **20**:1279-1285 (1981).