

Product Name: Tetrodotoxin citrate

Catalog No.: 1069

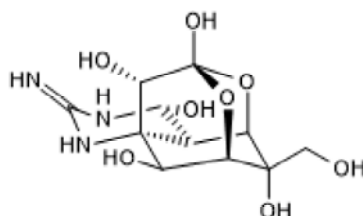
Batch No.: 56

CAS Number: 18660-81-6

IUPAC Name: (4*R*,4*aR*,5*R*,7*S*,9*S*,10*S*,10*aR*,11*S*,12*S*)-Octahydro-12-(hydroxymethyl)-2-imino-5,9:7,10a-dimethano-10*aH*-[1,3]dioxocino[6,5-*d*]pyrimidine-4,7,10,11,12-pentol citrate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	C ₁₁ H ₁₇ N ₃ O ₈
Batch Molecular Weight:	319.27
Physical Appearance:	White solid
Solubility:	water to 100 mM
Storage:	Store at -20°C
Batch Molecular Structure:	



(supplied in lyophilized citrate buffer)

2. ANALYTICAL DATA

HPLC:	Shows 99.2 % purity
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Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Tetrodotoxin citrate, the water-soluble citrate salt of tetrodotoxin, is a reversible, potent, selective and high affinity inhibitor of voltage gated sodium channels Na_v 1.6, 1.1, 1.3, 1.4, 1.2 and 1.7 (IC₅₀ values are 2.3 nM, 4.1 nM, 5.3 nM, 7.6 nM, 14 nM and 36 nM, respectively). Binding is reversible and high affinity (K_d = 1-10 nM). Tetrodotoxin shows antagonism of aconitine-induced cardiac toxicity, analgesic effects in mouse models of neuropathy and prolonged duration of local anesthesia in animals when combined with capsaicin. Tetrodotoxin also shows pH-dependent blockade of canine cardiac L-type Ca²⁺ (Ca_v1.x) channels, blocks primary ... Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

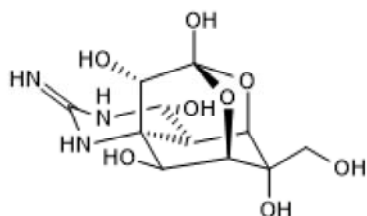
Batch Molecular Formula: C₁₁H₁₇N₃O₈

Batch Molecular Weight: 319.27

Physical Appearance: White solid

Minimum Purity: ≥98%

Batch Molecular Structure:



(supplied in lyophilized citrate buffer)

References:

Shoromony et al (2019) Prolonged duration local anesthesia by combined delivery of capsaicin- and tetrodotoxin-loaded liposomes. *Anesth.Analg.* **129** 709. PMID: 31425210.

Tsukamoto et al (2017) Differential binding of tetrodotoxin and its derivatives to voltage-sensitive sodium channel subtypes (Nav1.1 to Nav1.7). *Br.J.Pharmacol.* **174** 3881. PMID: 28832970.

Hegyí et al (2013) Tetrodotoxin blockade on canine cardiac L-type Ca²⁺ channels depends on pH and redox potential. *Mar.Drugs* **11** 2140. PMID: 23771047.

Storage: Store at -20°C

Solubility & Usage Info:

water to 100 mM

Each vial contains 1mg of tetrodotoxin and 5mg of lyophilized citrate buffer, pH 4.8.

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

Other Information:

This is a dual-use item with associated conditions of supply; the relevant licence/documentation from the appropriate governing body will be required.

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