

Chlorotoxin

Catalog No: tcsc0042493



Available Sizes

Size: 100ug

Size: 500ug

Size: 1mg

Size: 100μg

Size: 500μg



Specifications

CAS No:

163515-35-3

Formula:

$C_{158}H_{249}N_{53}O_{47}S_{11}$

Pathway:

Membrane Transporter/Ion Channel

Target:

Chloride Channel

Purity / Grade:

>98%

Solubility:

10 mM in DMSO

Observed Molecular Weight:

3995.71

Product Description

Chlorotoxin is a 36 amino-acid peptide from the venom of the Israeli scorpion *Leiurus quinquestriatus* with anticancer activity. Chlorotoxin is a **chloride channel** blocker.

IC50 & Target: Target: Chloride Channel^[1]

In Vitro: Chlorotoxin (Chlorotoxin) preferentially binds to tumor cells and has been harnessed to develop an imaging agent to help visualize tumors during surgical resection. In addition, chlorotoxin has potential as a vehicle to deliver anti-cancer drugs specifically to cancer cells. Chlorotoxin is shown to bind glioma cells, but is unable to bind normal rat astrocytes and Te671, a human rhabdomyosarcoma cell line. Chlorotoxin inhibits the migration of U251MG (glioma) cells, with an IC_{50} of 600 nM^[2]. Chlorotoxin binds to glioma cells is specific and involves high affinity ($K_d=4.2$ nM) and low affinity ($K_d=660$ nM) binding sites^[3]. Small conductance chloride channels are shown to be potently blocked by Chlorotoxin. Chlorotoxin has been used as a general pharmacological tool to investigate the function of chloride channels^[4].

In Vivo: Chlorotoxin shows insecticidal activity on insects and other invertebrates. After the administration of I-Chlorotoxin to tumor-bearing mice, the peptides accumulated within the tumor^[2]. Chlorotoxin selectively accumulates in the brain of tumor-bearing mice with calculated brain: muscle ratios of 36.4% of injected dose/g (ID/g), as compared to 12.4%ID/g in control animals^[3].



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