



上海源叶生物科技有限公司
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产品名称: **CHLOROTOXIN**
产品别名: **Chlorotoxin**

生物活性:	
Description	Chlorotoxin is a 36 amino-acid peptide from the venom of the Israeli scorpion <i>Leiurus quinquestriatus</i> 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] .
References	<p>[1]. DeBin JA, et al. Purification and characterization of chlorotoxin, a chloride channel ligand from the venom of the scorpion. Am J Physiol. 1993 Feb;264(2 Pt 1):C361-9.</p> <p>[2]. Ojeda PG, et al. Chlorotoxin: Structure, activity, and potential uses in cancer therapy. Biopolymers. 2016 Jan;106(1):25-36.</p> <p>[3]. Soroceanu L, et al. Use of chlorotoxin for targeting of primary brain tumors. Cancer Res. 1998 Nov 1;58(21):4871-9.</p> <p>[4]. Dardevet L, et al. Chlorotoxin: a helpful natural scorpion peptide to diagnose glioma and fight tumor invasion. Toxins (Basel). 2015 Mar 27;7(4):1079-101.</p>
实验参考:	
Animal Administration	Mouse: At 24, 48, 72, and 96 h after tumor-bearing and control SCID mice are injected with ¹²⁵ I-labeled Chlorotoxin, they are anesthetized and imaged. Both ¹²⁵ I- and ¹³¹ I-labeled Chlorotoxin-injected animals and their control counterparts are killed at indicated time points for biodistribution studies ^[3] .
References	<p>[1]. DeBin JA, et al. Purification and characterization of chlorotoxin, a chloride channel ligand from the venom of the scorpion. Am J Physiol. 1993 Feb;264(2 Pt 1):C361-9.</p> <p>[2]. Ojeda PG, et al. Chlorotoxin: Structure, activity, and potential uses in cancer therapy. Biopolymers. 2016 Jan;106(1):25-36.</p> <p>[3]. Soroceanu L, et al. Use of chlorotoxin for targeting of primary brain tumors. Cancer Res. 1998 Nov 1;58(21):4871-9.</p>



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