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产品名称: **CHLOROTOXIN**  
产品别名: **Chlorotoxin**

生物活性:	
<b>Description</b>	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.
<b>IC<sub>50</sub> &amp; Target</b>	Target: Chloride Channel <sup>[1]</sup>
<b>In Vitro</b>	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 <sub>50</sub> of 600 nM <sup>[2]</sup> . Chlorotoxin binds to glioma cells is specific and involves high affinity (K <sub>d</sub> =4.2 nM) and low affinity (K <sub>d</sub> =660 nM) binding sites <sup>[3]</sup> . 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 <sup>[4]</sup> .
<b>In Vivo</b>	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 <sup>[2]</sup> . 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 <sup>[3]</sup> .
<b>References</b>	[1]. DeBin JA, et al. Purification and characterization of chlorotoxin, a chloride channel ligand from the venom of the scorpion. <i>Am J Physiol.</i> 1993 Feb;264(2 Pt 1):C361-9. [2]. Ojeda PG, et al. Chlorotoxin: Structure, activity, and potential uses in cancer therapy. <i>Biopolymers.</i> 2016 Jan;106(1):25-36. [3]. Soroceanu L, et al. Use of chlorotoxin for targeting of primary brain tumors. <i>Cancer Res.</i> 1998 Nov 1;58(21):4871-9. [4]. Dardevet L, et al. Chlorotoxin: a helpful natural scorpion peptide to diagnose glioma and fight tumor invasion. <i>Toxins (Basel).</i> 2015 Mar 27;7(4):1079-101.
实验参考:	
<b>Animal Administration</b>	Mouse: At 24, 48, 72, and 96 h after tumor-bearing and control SCID mice are injected with <sup>125</sup> I-labeled Chlorotoxin, they are anesthetized and imaged. Both <sup>125</sup> I- and <sup>131</sup> I-labeled Chlorotoxin-injected animals and their control counterparts are killed at indicated time points for biodistribution studies <sup>[3]</sup> .
<b>References</b>	[1]. DeBin JA, et al. Purification and characterization of chlorotoxin, a chloride channel ligand from the venom of the scorpion. <i>Am J Physiol.</i> 1993 Feb;264(2 Pt 1):C361-9. [2]. Ojeda PG, et al. Chlorotoxin: Structure, activity, and potential uses in cancer therapy. <i>Biopolymers.</i> 2016 Jan;106(1):25-36. [3]. Soroceanu L, et al. Use of chlorotoxin for targeting of primary brain tumors. <i>Cancer Res.</i> 1998 Nov 1;58(21):4871-9.



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	[4]. Dardevet L, et al. Chlorotoxin: a helpful natural scorpion peptide to diagnose glioma and fight tumor invasion. <i>Toxins (Basel)</i> . 2015 Mar 27;7(4):1079-101.
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