

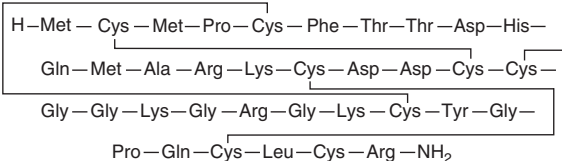
PRODUCT INFORMATION



Chlorotoxin (trifluoroacetate salt)

Item No. 35788

Formal Name: L-methionyl-L-cysteinyl-L-methionyl-L-prolyl-L-cysteinyl-L-phenylalanyl-L-threonyl-L-threonyl-L- α -aspartyl-L-histidyl-L-glutamyl-L-methionyl-L-alanyl-L-arginyl-L-lysyl-L-cysteinyl-L- α -aspartyl-L- α -aspartyl-L-cysteinyl-L-cysteinylglycylglycyl-L-lysylglycyl-L-arginylglycyl-L-lysyl-L-cysteinyl-L-tyrosylglycyl-L-prolyl-L-glutamyl-L-cysteinyl-L-leucyl-L-cysteinyl-L-argininamide, cyclic (2 $\rightarrow$ 19),(5 $\rightarrow$ 28),(16 $\rightarrow$ 33),(20 $\rightarrow$ 35)-tetrakis (disulfide), trifluoroacetate salt



• XCF₃COOH

Synonyms: CTX, TM-601

Peptide Sequence: MCMPCFTTDHQMARCDDCCGGKGRGKCYGPQCLCR-NH₂

MF: C₁₅₈H₂₄₉N₅₃O₄₇S₁₁ • XCF₃COOH

FW: 3,995.7

Purity: $\geq$ 95%

Supplied as: A solid

Storage: -20°C

Stability: $\geq$ 4 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Chlorotoxin (trifluoroacetate salt) is supplied as a solid. Chlorotoxin (trifluoroacetate salt) is sparingly soluble (1-10 mg/ml) in water. We do not recommend storing the aqueous solution for more than one day.

Description

Chlorotoxin is a peptide originally isolated from the venom of the scorpion *L. quinquestriatus*.^{1,2} It inhibits chloride currents in rat colonic enterocyte plasma membrane preparations when used at a concentration of 594 nM.¹ Chlorotoxin also binds to, but does not inhibit, matrix metalloproteinase-2 (MMP-2; IC₅₀ = 0.71 and >30 μ M, respectively), as well as neuropilin-1 (NRP-1; IC₅₀ = 0.78 μ M) in cell-free assays.³ It induces paralysis in crayfish (*P. clarkii*) but is not cytotoxic to human U87MG glioma, MCF-7 breast cancer, PC3 prostate cancer, and A549 lung cancer cells.^{1,2} Administration of chimeric antigen receptor (CAR) T cells expressing CAR with chlorotoxin as the targeting domain increase survival and decrease tumor volume in an orthotopic patient-derived xenograft (PDX) mouse model of glioblastoma.⁴ Liposomes containing chlorotoxin and encapsulating doxorubicin decrease tumor volume in a U87 glioma mouse xenograft model.⁵ Fluorescently labeled chlorotoxin has been used for tumor imaging *in vivo*.⁶

References

1. DeBin, J.A., Maggio, J.E., and Strichartz, G.R. *Am. J. Physiol.* **264**(2 Pt 1), C361-C369 (1993).
2. Ayed, A.S., Omran, M.A.A.A., Nabil, Z.I., et al. *Int. J. Pept. Res. Ther.* **27**(1), 659-667 (2021).
3. Farkas, S., Cioca, D., Murányi, J., et al. *J. Biol. Chem.* **299**(9), 104998 (2023).
4. Wang, D., Starr, R., Chang, W.C., et al. *Sci. Transl. Med.* **12**(533), eaaw2672 (2020).
5. Xiang, Y., Liang, L., Wang, X., et al. *J. Control Release* **152**(3), 402-410 (2011).
6. Veisheh, M., Gabikian, P., Bahrami, S.B., et al. *Cancer Res.* **67**(14), 6882-6888 (2007).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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