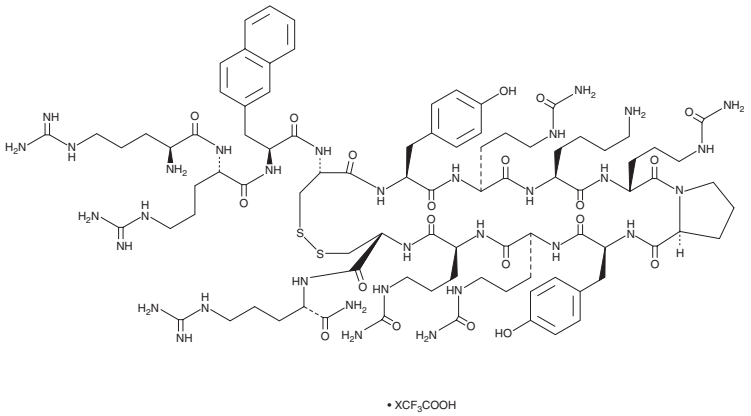
PRODUCT INFORMATION

TC 14012 (trifluoroacetate salt)

Item No. 11974

Formal Name:	L-arginyl-L-arginyl-3-(2-naphthalenyl)-L-alanyl-L-cysteinyl-L-tyrosyl-N^5-(aminocarbonyl)-L-ornithyl-L-lysyl-N^5-(aminocarbonyl)-D-ornithyl-L-prolyl-L-tyrosyl-L-arginyl-N^5-(aminocarbonyl)-L-ornithyl-L-cysteinyl- cyclic (4→13)-disulfide-L-argininamide, trifluoroacetate salt
Synonym:	H-Arg-Arg-Nal-Cys-Tyr-Cit-Lys-D-Cit-Pro-Tyr-Arg-Cit-Cys-Arg-NH_2
MF:	$C_{90}H_{140}N_{34}O_{19}S_2 \bullet XCF_3COOH$
FW:	2,066.4
Purity:	≥95%
UV/Vis.:	λ_{max}: 226, 277 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

TC 14012 (trifluoroacetate salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the TC 14012 (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. TC 14012 (trifluoroacetate salt) is soluble in the organic solvent DMSO at a concentration of approximately 10 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of TC 14012 (trifluoroacetate salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of TC 14012 (trifluoroacetate salt) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

TC 14012 is a peptidomimetic antagonist of chemokine (C-X-C motif) receptor 4 (CXCR4; IC_{50} = 2.9 nM) and CXCR7 agonist.[1,2] It induces β-arrestin recruitment in HEK293T cells expressing CXCR7 (EC_{50} = 350 nM).[2] TC 14012 reduces the cytopathic effect of HIV in infected MT-4 cells (EC_{50} = 0.4 nM) and inhibits HIV entry *in vitro* in a CXCR4-dependent manner (IC_{50} = 19.3 nM).[3] It inhibits migration induced by chemokine (C-X-C motif) ligand 12 (CXCL12) in MDA-MB-231 breast cancer cells and human umbilical vein endothelial cells (HUVECs) when used at concentrations ranging from 10 to 1,000 nM.[1] TC 14012 (10 mg/kg) decreases infarct size in a mouse model of acute myocardial infarction induced by left anterior descending (LAD) coronary artery ligation.[4]

References

1. Tamamura, H., Hori, A., Kanzaki, N., *et al. FEBS Lett.* **550(1-3)**, 79-83 (2003).
2. Gravel, S., Malouf, C., Boulais, P.E., *et al. J. Biol. Chem.* **285(49)**, 37939-37943 (2010).
3. Tamamura, H., Omagari, A., Hiramatsu, K., *et al. Bioorg. Med. Chem. Lett.* **11(14)**, 1897-1902 (2001).
4. Zhang, S., Yue, J., Ge, Z., *et al. Biomed. Pharmacother.* **127**, 110168 (2020).

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