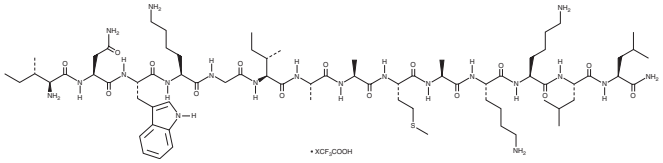
PRODUCT INFORMATION

Mastoparan X (trifluoroacetate salt)

Item No. 36903

CAS Registry No.:	72093-22-2
Formal Name:	L-isoleucyl-L-asparaginyl-L-tryptophyl-L-lysylglycyl-L-isoleucyl-L-alanyl-L-alanyl-L-methionyl-L-alanyl-L-lysyl-L-lysyl-L-leucyl-L-leucinamide, trifluoroacetate salt
Synonyms:	Mastoparan V, MPV, MPX
Peptide Sequence:	INWKGIAAMAKKLL-NH_2
MF:	$C_{73}H_{126}N_{20}O_{15}S \bullet XCF_3COOH$
FW:	1,556.0
Purity:	≥98%
UV/Vis.:	λ_{max}: 221 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



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

Laboratory Procedures

Mastoparan X (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the mastoparan X (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. Mastoparan X (trifluoroacetate salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of mastoparan X (trifluoroacetate salt) in ethanol is approximately 50 mg/ml and approximately 25 mg/ml in DMSO and DMF.

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 mastoparan X (trifluoroacetate salt) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of mastoparan X (trifluoroacetate salt) in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Mastoparan X is an antimicrobial peptide that has been found in wasp venom.[1] It is active against several Gram-positive and Gram-negative bacteria (MICs = 3-64 and 4-256 µg/ml, respectively) and induces permeabilization of *E. coli* cytoplasmic membranes by 86% when used at a concentration of 6.4 µg/ml. Mastoparan X induces GDP/GTP exchange by G_i in a concentration-dependent manner and binds to calmodulin (K_d = ~0.9 nM) in cell-free assays.[2,3] It induces necrosis in T98G glioblastoma multiforme (GBM) cells when used at a concentration of 20 µM.[4] Mastoparan X (128 µg/ml) induces degranulation of isolated rat peritoneal mast cells and hemolysis of isolated sheep, chicken, and human erythrocytes in a concentration-dependent manner.[1] *In vivo*, mastoparan X (20 mg/kg) increases survival, decreases disease severity, and prevents damage to jejunal villi and crypts in a mouse model of enterohemorrhagic *E. coli* infection.[5]

References

1. Lin, C., -H., Tzen, J.T.C., Shyu, C.-L., *et al. Peptides* **32(10)**, 2027-2036 (2011).
2. Malencik, D.A. and Anderson, S.R. *Biochem. Biophys. Res. Commun.* **114(1)**, 50-56 (1983).
3. Higashijima, T., Burnier, J., and Ross, E.M. *J. Biol. Chem.* **265(24)**, 14176-14186 (1990).
4. da Silva, A.M., Silva-Gonçalves, L.C., Oliveira, F.A., *et al. Mol. Neurobiol.* **55(7)**, 5490-5504 (2018).
5. Zhao, X., Wang, L., Zhi, C., *et al. Front. Microbiol.* **12**, 644887 (2021).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM