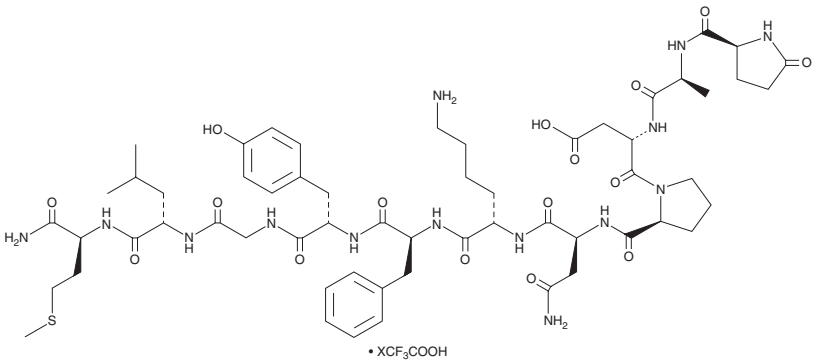
PRODUCT INFORMATION

Physalaemin (frog) (trifluoroacetate salt)

Item No. 43045

CAS Registry No.: 4705-64-0
Formal Name: L-5-oxo-L-prolyl-L-alanyl-L-aspartyl-L-prolyl-L-asparaginyl-L-lysyl-L-phenylalanyl-L-tyrosylglycyl-L-leucyl-methioninamide, trifluoroacetate salt
Peptide Sequence: XADPNKFYGLM-NH_2
(X = Pyroglutamic acid)
MF: $C_{58}H_{84}N_{14}O_{16}S \bullet XCF_3COOH$
FW: 1,265.5
Purity: ≥98%
Supplied as: A 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

Physalaemin (frog) (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the physalaemin (frog) (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. Physalaemin (frog) (trifluoroacetate salt) is soluble (≥10 mg/ml) in ethanol and DMSO.

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 physalaemin (frog) (trifluoroacetate salt) can be prepared by directly dissolving the solid in aqueous buffers. Physalaemin (frog) (trifluoroacetate salt) is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

Physalaemin is a peptide antagonist of the neurokinin-1 (NK_1) receptor (K_i = 1.51 nM).[1] It is selective for the NK_1 receptor over the NK_3 receptor (K_i = 457 nM). Physalaemin (2.5 µM) increases the percentage of cell clusters displaying neurite outgrowth and inhibits toxicity induced by amyloid-β peptides in NB41A3 cells.[2] It induces contraction in isolated and perfused guinea pig taenia coli when used at a concentration of 1 µM.[3] *In vivo*, physalaemin (2 µg/kg) decreases arterial blood pressure and induces salivation in normotensive dogs.[4]

References

1. Antoniou, M. and Poulos, C. Analogues of the C-terminal fragments of neurokinins with modifications at their C-terminal methionyl residue. Structure-activity studies. *Int. J. Pept. Protein Res.* **43(4)**, 344-350 (1994).
2. Zhao, X., Valantas, J.A., Vyas, S., *et al.* Comparative toxicity of amyloid β-peptide in neuroblastoma cell lines: Effects of albumin and physalaemin. *Comp. Biochem. Physiol. C Comp. Pharmacol. Toxicol.* **106(1)**, 165-170 (1993).
3. Leander, S., Håkanson, R., Rosell, S., *et al.* A specific substance P antagonist blocks smooth muscle contractions induced by non-cholinergic, non-adrenergic nerve stimulation. *Nature* **294(5840)**, 467-469 (1981).
4. Bertaccini, G. and De Caro, G. The effect of physalaemin and related polypeptides on salivary secretion. *J. Physiol.* **181(1)**, 68-81 (1965).

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