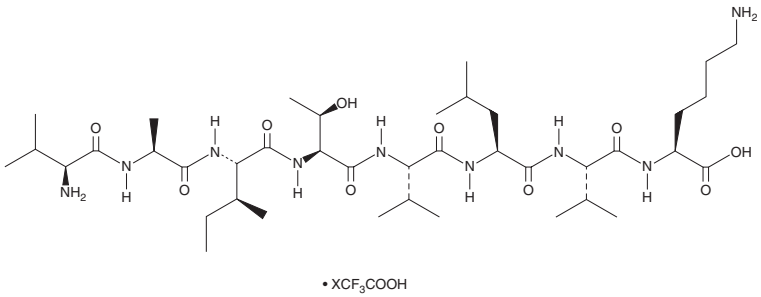
PRODUCT INFORMATION

CALP1 (trifluoroacetate salt)

Item No. 24402

Formal Name:	L-valyl-L-alanyl-L-isoleucyl-L-threonyl-L-valyl-L-leucyl-L-valyl-L-lysine, trifluoroacetate salt
Synonym:	Calcium-like Peptide 1
MF:	$C_{40}H_{75}N_9O_{10} \bullet XCF_3COOH$
FW:	842.1
Purity:	≥95%
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

CALP1 (trifluoroacetate salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the CALP1 (trifluoroacetate salt) in the solvent of choice. CALP1 (trifluoroacetate salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of CALP1 (trifluoroacetate salt) in ethanol is approximately 0.5 mg/ml and approximately 5 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 CALP1 (trifluoroacetate salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of CALP1 (trifluoroacetate salt) in PBS, pH 7.2, is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

CALP1 is an 8-residue calcium-like peptide that interacts with an EF hand motif based on the troponin C superfamily calcium binding site.[1] It binds to calmodulin (K_d = 88 µM) and activates phosphodiesterase in the presence of calmodulin and absence of calcium. CALP1 also acts as a cell-permeable inhibitor of calcium influx through glutamate receptor channels in cultured rat neocortical neurons thereby inhibiting excitatory cytotoxicity (IC_{50} = 52.48 µM) and apoptosis (IC_{50} = 44.78 µM).[2] CALP1 (1 mg/kg) pretreatment prevents increases in lung alveolar inflammatory cells after six, but not 24, hours in sensitized guinea pigs challenged with ovalbumin in a model of allergic asthma.[3] It also decreases radical production induced by phorbol 12-myristate 13-acetate (PMA; Item No. 10008014) in broncho-alveolar lavage cells after six and 24 hours and dose-dependently decreases histamine-induced hyperresponsiveness in isolated guinea pig tracheal rings.

References

1. Villain, M., Jackson, P.L., Manion, M.K., *et al. De novo* design of peptides targeted to the EF hands of calmodulin. *J. Biol. Chem.* **275(4)**, 2676-2685 (2000).
2. Manion, M.K., Su, Z., Villain, M., *et al.* A new type of Ca^{2+} channel blocker that targets Ca^{2+} sensors and prevents Ca^{2+}-mediated apoptosis. *FASEB J.* **14(10)**, 1297-1306 (2000).
3. Ten Broeke, R., Brandhorst, M.C., Leusink-Muis, T., *et al.* Ca^{2+} sensors modulate asthmatic symptoms in an allergic model for asthma. *Eur. J. Pharmacol.* **476(1-2)**, 151-157 (2003).

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