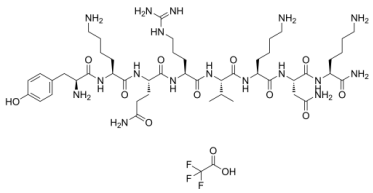
Data Sheet

Product Name:	PACAP-38 (31-38), human, mouse, rat (TFA)
Cat. No.:	CS-0105849
Molecular Formula:	$C_{49}H_{84}F_3N_{17}O_{13}$
Molecular Weight:	1176.29
Target:	Calcium Channel; EGFR; ERK; Reactive Oxygen Species
Pathway:	Immunology/Inflammation; JAK/STAT Signaling; MAPK/ERK Pathway; Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease; Neuronal Signaling; NF-κB; Protein Tyrosine Kinase/RTK; Stem Cell/Wnt
Solubility:	H_2O : 100 mg/mL (ultrasonic)



BIOLOGICAL ACTIVITY:

PACAP-38 (31-38), human, mouse, rat TFA is a **PAC_1 receptor** activator and increases the α-secretase activity. PACAP-38 (31-38), human, mouse, rat TFA elevates cytosolic Ca^{2+}, increases proliferation and increases phosphorylation of extracellular regulates kinase (ERK) and the epidermal growth factor receptor (EGFR). PACAP-38 (31-38), human, mouse, rat TFA demonstrates potent, efficacious, and sustained stimulatory effects on sympathetic neuronal NPY and catecholamine production. PACAP-38 (31-38), human, mouse, rat TFA can be used for neurotrophic and neuroprotective research[1][2][3]. ***In Vitro:*** PACAP-38 (31-38), human, mouse, rat TFA (100 nM; 2 min; NCI-H838 cells) induces EGFR, HER2 and ERK tyrosine phosphorylation[1].

PACAP-38 (31-38), human, mouse, rat TFA (100 nM; 30 min; NCI-H838 cells) induces EGFR tyrosine phosphorylation with generates ROS and increases ROS levels by 51%[1].

PACAP-38 (31-38), human, mouse, rat TFA (10 nM; 48 h) stimulates the growth of NCI-H838 cells[1].

PACAP-38 (31-38), human, mouse, rat TFA (300 nM; 4 h) stimulates generation of APPsα in neural cells[2].

PACAP-38 (31-38), human, mouse, rat TFA (0.01-10 nM; HEK 293 cells) stimulates neural cells express endogenous PAC1 receptors by cAMP accumulation and by an increase in cytosolic free calcium and induces elevation of the intracellular Ca^{2+} concentration in a dose-dependent manner with an EC_{50} value of 0.81 nM[2].

PACAP-38 (31-38), human, mouse, rat TFA (0.01 nM; 48 h) elicits potent and efficacious stimulation of NPY secretion from SCG neuronal cultures[3].

PACAP-38 (31-38), human, mouse, rat TFA (100 nM; 14 d) produces sustained stimulated NPY and catecholamine secretionmpathetic neurons[3].

References:

[1]. Moody TW, et, al. PAC1 regulates receptor tyrosine kinase transactivation in a reactive oxygen species-dependent manner. Peptides. 2019 Oct;120:170017.

[2]. Kojro E, et, al. The neuropeptide PACAP promotes the alpha-secretase pathway for processing the Alzheimer amyloid precursor protein. FASEB J. 2006 Mar;20(3):512-4.

[3]. Braas KM, et, al. Pituitary adenylate cyclase-activating polypeptides, PACAP-38 and PACAP-27, regulation of sympathetic neuron catecholamine, and neuropeptide Y expression through activation of type I PACAP/VIP receptor isoforms. Ann N Y Acad Sci. 1996 Dec 26;805:204-16; discussion 217-8.

CAIndexNames:

L-Lysinamide, L-tyrosyl-L-lysyl-L-glutaminyl-L-arginyl-L-valyl-L-lysyl-L-asparaginyl- (9CI) (TFA)

SMILES:

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Caution: Product has not been fully validated for medical applications. For research use only.

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