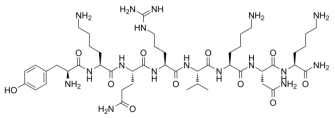
PACAP-38 (31-38), human, mouse, rat



Cat. No.:	HY-P1845
CAS No.:	138764-85-9
Molecular Formula:	$C_{47}H_{83}N_{17}O_{11}$
Molecular Weight:	1062.27
Sequence:	Tyr-Lys-Gln-Arg-Val-Lys-Asn-Lys-NH2
Sequence Shortening:	YKQRVKNK-NH2
Target:	ERK; EGFR; Reactive Oxygen Species; Calcium Channel
Pathway:	MAPK/ERK Pathway; Stem Cell/Wnt; JAK/STAT Signaling; Protein Tyrosine Kinase/RTK; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Sealed storage, away from moisture Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (94.14 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.9414 mL	4.7069 mL	9.4138 mL
	5 mM	0.1883 mL	0.9414 mL	1.8828 mL
	10 mM	0.0941 mL	0.4707 mL	0.9414 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

PACAP-38 (31-38), human, mouse, rat is a PAC_1 receptor activator and increases the α-secretase activity. PACAP-38 (31-38), human, mouse, rat 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 demonstrates potent, efficacious, and sustained stimulatory effects on sympathetic neuronal NPY and catecholamine production. PACAP-38 (31-38), human, mouse, rat can be used for neurotrophic and neuroprotective research[1][2][3].

In Vitro

PACAP-38 (31-38), human, mouse, rat (100 nM; 2 min; NCI-H838 cells) induces EGFR, HER2 and ERK tyrosine phosphorylation [1].

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

PACAP-38 (31-38), human, mouse, rat (300 nM; 4 h) stimulates generation of APPsα in neural cells[2].
PACAP-38 (31-38), human, mouse, rat (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 (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 (100 nM; 14 d) produces sustained stimulated NPY and catecholamine secretionmpathetic neurons[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	NCI-H838 cells
Concentration:	10 nM
Incubation Time:	48 hours
Result:	Increased the number of NCI-H838 cells by 72%.

Western Blot Analysis[1]

Cell Line:	100 nM
Concentration:	100 nM
Incubation Time:	2 minutes
Result:	Increased tyrosine phosphorylation of the EGFR, HER2, and ERK by 377, 299 and 216%, respectively.

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 De

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