

PACAP (1-27), human, ovine, rat TFA

Cat. No.:	HY-P0176A
Molecular Formula:	C ₁₄₄ H ₂₂₅ F ₃ N ₄₀ O ₄₁ S
Molecular Weight:	3261.68
Sequence:	His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Ala-Ala-Val-Leu-NH ₂ <small>HSDGIFTDSYSRYRKQMAVKKYLA AVL-NH₂ (TFA salt)</small>
Sequence Shortening:	HSDGIFTDSYSRYRKQMAVKKYLA AVL-NH ₂
Target:	PACAP Receptor
Pathway:	GPCR/G Protein
Storage:	Sealed storage, away from moisture and light, under nitrogen Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)

SOLVENT & SOLUBILITY

In Vitro	DMSO : 250 mg/mL (76.65 mM; Need ultrasonic)																			
	H ₂ O : 12.5 mg/mL (3.83 mM; Need ultrasonic)																			
	<table border="1"> <thead> <tr> <th rowspan="2">Concentration</th> <th colspan="3">Mass</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td>1 mM</td> <td>0.3066 mL</td> <td>1.5330 mL</td> <td>3.0659 mL</td> </tr> <tr> <td>5 mM</td> <td>0.0613 mL</td> <td>0.3066 mL</td> <td>0.6132 mL</td> </tr> <tr> <td>10 mM</td> <td>0.0307 mL</td> <td>0.1533 mL</td> <td>0.3066 mL</td> </tr> </tbody> </table>	Concentration	Mass			1 mg	5 mg	10 mg	1 mM	0.3066 mL	1.5330 mL	3.0659 mL	5 mM	0.0613 mL	0.3066 mL	0.6132 mL	10 mM	0.0307 mL	0.1533 mL	0.3066 mL
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Please refer to the solubility information to select the appropriate solvent.																				
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (0.64 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: 2.08 mg/mL (0.64 mM); Suspended solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (0.64 mM); Clear solution 																			

BIOLOGICAL ACTIVITY

Description	PACAP (1-27), human, ovine, rat TFA (PACAP 1-27 TFA) is the N-terminal fragment of PACAP-38, and is a potent PACAP receptor antagonist with IC ₅₀ s of 3 nM, 2 nM and 5 nM for rat PAC1, rat VPAC1 and human VPAC2, respectively ^[1] .
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IC₅₀ & Target	IC50: 3 nM (rat PAC1), 2 nM (rat VPAC1), 5 nM (human VPAC2) ^[1]
In Vitro	Radioligand receptor binding assays with I-monoiodinated PACAP (1-27), human, ovine, rat confirms the presence of PAC - receptors on AR4-2J cells, since PACAP (1-27), human, ovine, rat and PACAP(1-38) equipotently displaces radioligand binding with a K _d of 1-2 nM, whereas vasoactive intestinal peptide (VIP) is 1000-fold less potent. PACAP (1-27), human, ovine, rat exhibits a distinct and much higher susceptibility to VIP-amino acid substitutions. PACAP (1-27), human, ovine, rat has potency and binding affinity to stimulate IP ₃ and cAMP formation in AR4-2J cells ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The inhibitory effect of pituitary adenylate cyclase activating polypeptide (PACAP (1-27), human, ovine, rat) on the increase in total pulmonary resistance (RL) caused either by allergen or histamine in anaesthetized, ventilated guinea-pigs is studied. PACAP (1-27), human, ovine, rat given via i.v. infusion (0.045-4.5 nmol/kg/min) dose-dependently reduces the increase in RL caused by inhaled ovalbumin and histamine. At the highest dose, PACAP (1-27), human, ovine, rat prevents the increase in RL caused by ovalbumin and histamine completely. Infusion of PACAP (1-27), human, ovine, rat and the β ₂ -adrenoceptor agonist, salbutamol (0.045-4.5 nmol/kg/min) inhibit the increase in RL similarly, but salbutamol increases the heart rate more than PACAP (1-27), human, ovine, rat ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Metab. 2022 Nov 11;S1550-4131(22)00490-9.

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REFERENCES

- [1]. Gourlet P, et al. Fragments of pituitary adenylate cyclase activating polypeptide discriminate between type I and II recombinant receptors. *Eur J Pharmacol.* 1995 Dec 4;287(1):7-11.
- [2]. Schäfer H, et al. Structural motifs of pituitary adenylate cyclase-activating polypeptide (PACAP) defining PAC1-receptor selectivity. *Regul Pept.* 1999 Feb 5;79(2-3):83-92.
- [3]. Lindén A, et al. Inhibition of bronchoconstriction by pituitary adenylate cyclase activating polypeptide (PACAP 1-27) in guinea-pigs in vivo. *Br J Pharmacol.* 1995 Jul;115(6):913-6.

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

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