Data Sheet (Cat.No.TP1249)

TargetMol
A DRUG SCREENING EXPERT

Adrenocorticotropic Hormone (ACTH) (1-39), rat

Chemical Properties

CAS No.:	77465-10-2
Formula:	C210H315N57O57S
Molecular Weight:	4582.23
Appearance:	N/A
Storage:	0-4℃ for short term (days to weeks), or -20℃ for long term (months).

Biological Description

Description	Adrenocorticotropic Hormone (ACTH) (1-39), rat is a potent melanocortin 2 (MC2) receptor agonist.Peptide fragments of ACTH (1-39) were formed during in vitro incubation of the peptide with membrane preparations. ACTH (1-39) were isolated by high pressure liquid chromatography, and peptide fragments of ACTH (1-39) characterized by determination of amino acid composition and NH2- terminal residue.
In vitro	ACTH 1-39 at concentrations of 100-400 nM has no toxic effect on neurons, while ACTH provides protection from excitotoxic neurol death induced by glutamate (100 μM), NMDA (1 mM), AMPA (50 μM), and kaite (25 μM). ACTH at 400 nM provides substantial protection in each case. ACTH at either 200 or 400 nM protects neurons from quinolinic acid (25 μM). There is also protection by ACTH from cell death induced by 2 μM H_2O_2, which gives rise to reactive oxygen species (ROS), with significantly more protection at 400 nM ACTH compared to 200 nM. ACTH gives modest protection against rapid release of nitric oxide (NO) by NOC-12 but not slow release by NOC-18. ACTH (200 or 400 nM) protects neurons from cytotoxic effects of staurosporine (10-20 nM), a classic inducer of cell death via apoptosis. ACTH reduces cell death from 80% to 55%[1].
In vivo	The icv injection of ACTH significantly reduces cumulative food intake over the observation period compared with the saline/IgG group. The injection of ACTH Ab into the PVN abolishes the anorexigenic effect of ACTH. Infusion icv of ACTH significantly decreases cumulative food intake in rats that receive α-MSH Ab into the PVN and ACTH icv, and food intake is as low as in the group treated with ACTH icv and IgG into the PVN. Injection of either ACTH Ab or α-MSH Ab into the PVN significantly increase cumulative food intake compared with IgG-treated animals; the combined application of both Ab' s do not increase food intake further[2].

Solubility Information

Solubility	H_2O: Soluble (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.218 mL	1.091 mL	2.182 mL
5 mM	0.044 mL	0.218 mL	0.436 mL
10 mM	0.022 mL	0.109 mL	0.218 mL
50 mM	0.004 mL	0.022 mL	0.044 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 ℃ for 6 months; - 20 ℃ for 1 month. Please use it as soon as possible.

Reference

1. Lisak RP, et al. Melanocortin receptor agonist ACTH 1-39 protects rat forebrain neurons from apoptotic, excitotoxic and inflammation-related damage. Exp Neurol. 2015 Nov;273:161-7.

2. Schulz C, et al. Endogenous ACTH, not only alpha-melanocyte-stimulating hormone, reduces food intake mediated by hypothalamic mechanisms. Am J Physiol Endocrinol Metab. 2010 Feb;298(2):E237-44.

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