Product Data Sheet

Product Name: ACTH 1-17 (α1-17-ACTH)
Cat. No.: GC31109

Chemical Properties

Cas. No.	7266-47-9		
SMILES	Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-Gly-Lys-Pro-Val-Gly-Lys-Lys-Arg		
Formula	$C_{95}H_{145}N_{29}O_{23}S$	M.Wt	2093.41
Solubility	Soluble in Water	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	ACTH 1-17 (α1-17-ACTH)		

Protocol

Cell experiment: Rat pituitary cells are incubated in the presence of varying concentrations of ACTH (1-17) (0.1 nM-1 μM). A significant increase of growth hormone secretion is documented with each concentration[1].

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

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Animal experiment:

Mice[3]The effects of ACTH (1-17) on the rate of DNA labeling in the metaphyseal bone of CD2F1 mice are tested on a chronopharmacological dosing schedule. Groups of mice that has been conditioned to a 12-hr light/12-hr dark schedule are injected at one of six different timepoints, 4 hr apart during ,a single 24-hr span with either a low (0.021 I.U/kg) or a high (20 I.U./kg) dose of ACTH (1-17). Control groups receive injections of a placebo at corresponding timepoints. Subgroups of mice are injected with [3H]thymidine ([3H]Tdr) to follow the changes in DNA labeling in the proximal tibial metaphysis at 15 min and 2, 4, 8, 12 and 24 hr after ACTH (1-17) or placebo treatment[3].

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References:

[1]. Tsatmali M et al. ACTH1-17 is a more potent agonist at the human MC1 receptor than alpha-MSH. Cell Mol Biol (Noisy-le-grand). 1999 Nov;45(7):1029-34.
[2]. Ceda GP, et al. The effects of ACTH (1-17) on GH secretion in vitro. Horm Metab Res. 1987 Aug;19(8):361-3.
[3]. Walker WV, et al. Effect of an adrenocorticotropin analogue, ACTH (1-17), on DNA synthesis in murine metaphyseal bone. Biochem Pharmacol. 1985 Apr 15;34(8):1191-6.

Background

ACTH (1-17), an adrenocorticotropin analogue, is a potent human melanocortin 1 (MC1) receptor agonist with a Ki of 0.21 nM.

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ACTH (1-17) is a potent agonist at the hMC1R. ACTH (1-17) shows high affinity for the hMC1R with a Ki value of 0.21±0.03 nM which is slightly higher than that of 0.13±0.005 nM for alpha-MSH[1]. ACTH (1-17) induces a slight and not significant increase in growth hormone secretion even when micromolar concentrations of the peptide are employed in rat pituitary cultures[2].

Inhibition of DNA labeling is noted when the ACTH (1-17) is administered at 2 hr after the beginning of the daily dark span when nocturnal animals become active. When administered at this circadian stage, the larger dose in particular is associated with an inhibition of DNA labeling lasting for 24 hr. The inhibitory effect is much shorter when the same dose is injected 4 hr earlier[3].

[1]. Tsatmali M et al. ACTH1-17 is a more potent agonist at the human MC1 receptor than alpha-MSH. Cell Mol Biol (Noisy-le-grand). 1999 Nov;45(7):1029-34. [2]. Ceda GP, et al. The effects of ACTH (1-17) on GH secretion in vitro. Horm Metab Res. 1987 Aug;19(8):361-3. [3]. Walker WV, et al. Effect of an adrenocorticotropin analogue, ACTH (1-17), on DNA synthesis in murine metaphyseal bone. Biochem Pharmacol. 1985 Apr 15;34(8):1191-6.

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