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PRODUCT INFORMATION

ACTH (1-17) (human, mouse, rat, porcine, bovine, ovine) (trifluoroacetate salt)

Item No. 27429

Formal Name:	α ¹⁻¹⁷ -corticotropin, trifluoroacetate salt	
Synonyms:	Adrenocorticotropic Hormone (1-17), SYSMEHFRWVGKPVGKKR-OH	
MF:	C ₉₅ H ₁₄₅ N ₂₉ O ₂₃ S • XCF ₃ COOH	H—Ser—Tyr—Ser—Met—Glu—His—Phe—Arg—Trp—Gly—
FW:	2,093.4	Lys—Pro—Val—Gly—Lys—Lys—Arg—OH
Purity:	≥98%	• XCF ₃ COOH
UV/Vis.:	λ _{max} : 277 nm	
Supplied as:	A solid	
Storage:	-20°C	
Stability:	≥2 years	

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

ACTH (1-17) (human, mouse, rat, porcine, bovine, ovine) (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the ACTH (1-17) (human, mouse, rat, porcine, bovine, ovine) (trifluoroacetate salt) in the solvent of choice. ACTH (1-17) (human, mouse, rat, porcine, bovine, ovine) (trifluoroacetate salt) is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of ACTH (1-17) (human, mouse, rat, porcine, bovine, ovine) (trifluoroacetate salt) in these solvents is approximately 15 and 3 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of ACTH (1-17) (human, mouse, rat, porcine, bovine, ovine) (trifluoroacetate salt) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of ACTH (1-17) (human, mouse, rat, porcine, bovine, ovine) (trifluoroacetate salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

ACTH (1-17) is a peptide fragment of adrenocorticotropic hormone (ACTH; Item No. 24257), a peptide hormone found in the brain that is involved in the biological stress response.¹ It binds to melanocortin receptors (MCRs; K_s = 0.23, 14, 419, and 4,240 nM for MC1R, MC3R, MC4R, and MC5R, respectively).² It is an agonist at MC1R, increasing adenylate cyclase activity with an EC₅₀ value of 3.02 nM in HEK293 cells expressing MC1R.³ ACTH (1-17) (160 µg/kg, i.v.) increases mean arterial blood pressure (MAP) following bleeding-induced hypotension in a rat model of hemorrhagic shock 15-30 minutes after administration.⁴ It induces melanogenesis in a biphasic manner (EC₅₀s = 0.0001 and 0.08 nM) and differentiation of melanocytes when used at concentrations ranging from 0.01 to 1,000 nM.^{3,5}

References

1. Strand, F.L., Lee, S.J., Zuccarelli, L.A., *et al.* *Rev. Neurosci.* **4**(4), 321-363 (1993).
2. Schiöth, H.B., Muceniece, R., Larsson, M., *et al.* *J. Endocrinol.* **155**(1), 73-78 (1997).
3. Tsatmalia, M., Wakamatsu, K., Graham, A.J., *et al.* *Ann. N.Y. Acad. Sci.* **885**(1), 466-469 (1999).
4. Bertolini, A., Guarini, S., Rompianesi, E., *et al.* *Eur. J. Pharmacol.* **130**(1-2), 19-26 (1986).
5. Hirobe, T. and Hiroyuki, A. *J. Exp. Zool.* **286**(6), 632-640 (2000).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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