Adrenocorticotropic Hormone (ACTH) (1-39), human(TFA)

Cat. No.:	HY-P1211A
Molecular Formula:	$C_{207}H_{308}N_{56}O_{58}S.C_2HF_3O_2$
Molecular Weight:	4655.16
Sequence:	Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-Gly-Lys-Pro-Val-Gly-Lys-Lys-Arg-Arg-Pro-Val-Lys -Val-Tyr-Pro-Asn-Gly-Ala-Glu-Asp-Glu-Ser-Ala-Glu-Ala-Phe-Pro-Leu-Glu-Phe
Sequence Shortening:	SYSMEHFRWGKPVGKKRRPVKVYPNGAEDESAEAFPLEF
Target:	Melanocortin Receptor
Pathway:	GPCR/G Protein; 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)

BIOLOGICAL ACTIVITY

Description	Adrenocorticotropic Hormone (ACTH) (1-39), human(TFA) is a melanocortin receptor agonist.
IC_{50} & Target	Melanocortin receptor[1]
In Vitro	Adrenocorticotropic Hormone (ACTH) (1-39), human (ACTH 1-39), a member of the melanocortin family, stimulates production of CS by the adrenals, but melanocortin receptors are also found in the central nervous system (CNS) and on immune cells. ACTH 1-39 protects neurons in vitro from several apoptotic, excitotoxic and inflammation-related insults[1]. The conditioned medium (CM) is prepared from untreated astroglia (AS) cultures and from AS cultures treated with 200 nM ACTH 1-39 for 24 h, washed to remove ACTH 1-39, then incubated for another 24 h in DMEM. In initial experiments, no difference is found in oligodendroglia (OL) viability in the presence of OL definedmediumwith 2% newborn calf serum (NCS) or AS CM (prepared in DMEM with no serum). After 24 h, OL death under each condition varies between 1 and 4%. Similar results for OL viability are obtained with microglia (MG) CM. In subsequent experiments, controls in each experiment consist of OL in defined medium with 2% NCS[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	For analysis of the effects of ACTH 1-39 or CM on oligodendroglia (OL) death, purified OL cultures are incubated with ACTH 1-39 at 200 nM or the various CM for 30 min before addition of the toxic agents. Cell death is assessed after 1 day using trypan blue uptake as the indicator of cell death. Trypan blue is considered a preferred method for measurement of total cell death compared to terminal deoxynucleotidyl transferase dUTP nick end labeling (TUNEL), which measures only apoptosis, or live/dead fluorescent assays, which may not detect permeable dead cells with degraded DNA, thus underestimating cell death. Differentiated OL are identified by their characteristicmorphology, that is, rounded or oval birefringent cells with multiple lacy branching processes, and in some cases by immunostaining with antibodies to galactolipids[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[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]. Lisak RP, et al. The melanocortin ACTH 1-39 promotes protection of oligodendrocytes by astroglia. J Neurol Sci. 2016 Mar 15;362:21-6.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA