

# ACTH (HAT N36): sc-69903

## BACKGROUND

POMC (pro-opiomelanocortin), also known as corticotropin-lipotropin, is a 267 amino acid polypeptide hormone precursor that goes through extensive, tissue-specific posttranslational processing by prohormone convertases. POMC is cleaved into ten hormone chains named NPP,  $\gamma$ -MSH, ACTH,  $\alpha$ -MSH, CLIP (corticotropin-like intermediary peptide), Lipotropin  $\beta$ , Lipotropin  $\gamma$ ,  $\beta$ -MSH,  $\beta$  endorphin and Met-enkephalin. Defects in the gene that encodes POMC are the cause of POMC deficiency, which is characterized by red hair and adrenal insufficiency. Mutations in the POMC gene have also been linked to susceptibility to obesity. ACTH, also known as corticotropin, is a 39 amino acid active peptide that stimulates the secretion of cortisol by the adrenal gland. ACTH is often produced in response to biological stress.

## REFERENCES

1. Millington, G.W., et al. 2001. Differential effects of  $\alpha$ -,  $\beta$ - and  $\gamma$ (2)-melanocyte-stimulating hormones on hypothalamic neuronal activation and feeding in the fasted rat. *Neuroscience* 108: 437-445.
2. Grässel, S., et al. 2009. The melanocortin system in articular chondrocytes: melanocortin receptors, pro-opiomelanocortin, precursor proteases, and a regulatory effect of  $\alpha$ -melanocyte-stimulating hormone on proinflammatory cytokines and extracellular matrix components. *Arthritis Rheum.* 60: 3017-3027.
3. McLaughlin, P.J., et al. 2009. Growth inhibition of thyroid follicular cell-derived cancers by the opioid growth factor (OGF) - opioid growth factor receptor (OGFr) axis. *BMC Cancer* 9: 369.
4. Belgardt, B.F., et al. 2009. Hormone and glucose signalling in POMC and AgRP neurons. *J. Physiol.* 587: 5305-5314.
5. Fehér, P., et al. 2010. Dephosphorylation/inactivation of tyrosine hydroxylase at the median eminence of the hypothalamus is required for suckling-induced prolactin and adrenocorticotrop hormone responses. *Brain Res. Bull.* 82: 141-145.

## CHROMOSOMAL LOCATION

Genetic locus: POMC (human) mapping to 2p23.3.

## SOURCE

ACTH (HAT N36) is a mouse monoclonal antibody raised against amino acids 1-13 of ACTH of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 mL PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

ACTH (HAT N36) is recommended for detection of POMC and the processed active peptide ACTH of human and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for POMC siRNA (h): sc-37277, POMC shRNA Plasmid (h): sc-37277-SH and POMC shRNA (h) Lentiviral Particles: sc-37277-V.

Molecular Weight of POMC precursor: 30 kDa.

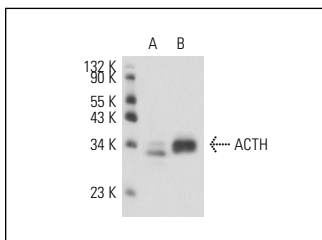
Molecular Weight of ACTH: 5 kDa.

Positive Controls: POMC (h): 293T Lysate: sc-111490, rat pituitary tissue extract or AtT-20/D16V-F2 whole cell lysate.

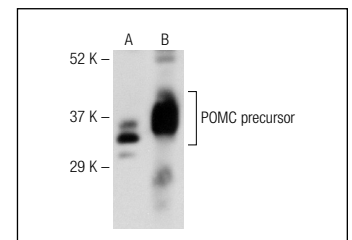
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



ACTH (HAT N36): sc-69903. Western blot analysis of ACTH expression in AtT-20/D16V-F2 whole cell lysate (A) and rat pituitary tissue extract (B).



ACTH (HAT N36): sc-69903. Western blot analysis of POMC/ACTH expression in AtT-20/D16V-F2 whole cell lysate (A) and rat pituitary tissue extract (B).

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.