

# ACTH (HAT C22): sc-69902

## 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  $\gamma$ -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.
6. Höftberger, R., et al. 2010. Peroxisomal localization of the proopiome-lanocortin-derived peptides  $\beta$ -lipotropin and  $\beta$ -endorphin. *Endocrinology* 151: 4801-4810.
7. Canzian, F., et al. 2010. Comprehensive analysis of common genetic variation in 61 genes related to steroid hormone and Insulin-like growth factor-I metabolism and breast cancer risk in the NCI breast and prostate cancer cohort consortium. *Hum. Mol. Genet.* 19: 3873-3884.
8. Jang, P.G., et al. 2010. NF $\kappa$ B activation in hypothalamic pro-opiome-lanocortin neurons is essential in illness- and leptin-induced anorexia. *J. Biol. Chem.* 285: 9706-9715.

## CHROMOSOMAL LOCATION

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

## SOURCE

ACTH (HAT C22) is a mouse monoclonal antibody raised against amino acids 18-39 of ACTH of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

ACTH (HAT C22) is recommended for detection of POMC and the processed active peptide ACTH of human 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

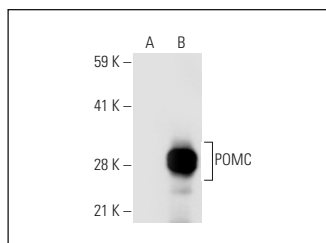
Suitable for use as control antibody for POMC siRNA (h): sc-37277, POMC shRNA Plasmid (h): sc-37277-SH and POMC shRNA (h) Lentiviral Particles: sc-37277-V.

Molecular Weight of POMC precursor: 30 kDa.

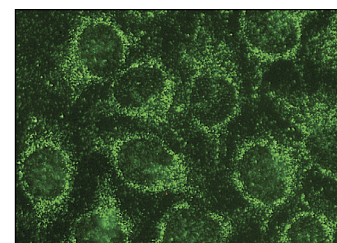
Molecular Weight of ACTH: 5 kDa.

Positive Controls: POMC (h): 293T Lysate: sc-111490.

## DATA



ACTH (HAT C22): sc-69902. Western blot analysis of POMC expression in non-transfected: sc-117752 (A) and human POMC transfected: sc-111490 (B) 293T whole cell lysates.



ACTH (HAT C22): sc-69902. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## 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.

## PROTOCOLS

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

## CONJUGATES

See **ACTH/CLIP (F-3): sc-373878** for ACTH/CLIP antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.