

POMC (h): 293T Lysate: sc-111490

BACKGROUND

POMC (pro-opiomelanocortin), also known as corticotropin-lipotropin, is a 267 amino acid polypeptide hormone precursor that goes through extensive, tissue-specific post-translational processing by prohormone convertases. POMC is cleaved into ten hormone chains named NPP, γ -MSH, ACTH, α -MSH, CLIP (corticotropin-like intermediary peptide), Lipotropin β , Lipotropin γ , β -MSH, β endorphin and Met-enkephalin. The processed active peptide ACTH stimulates the release of cortisol by the adrenal glands while γ -MSH stimulates adrenal steroidogenesis. The active peptides β -endorphin and Met-enkephalin are both opioid neurotransmitters. 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.

REFERENCES

1. Millington, G.W., Tung, Y.C., Hewson, A.K., O'Rahilly, S. and Dickson, S.L. 2001. Differential effects of α -, β - and γ -melanocyte-stimulating hormones on hypothalamic neuronal activation and feeding in the fasted rat. *Neuroscience* 108: 437-445.
2. Grässel, S., Opolka, A., Anders, S., Straub, R.H., Grifka, J., Luger, T.A. and Böhm, M. 2009. The melanocortin system in articular chondrocytes: melanocortin receptors, pro-opiomelanocortin, precursor proteases, and a regulatory effect of α -melanocyte-stimulating hormone on proinflammatory cytokines and extracellular matrix components. *Arthritis Rheum.* 60: 3017-3027.
3. McLaughlin, P.J., Zagon, I.S., Park, S.S., Conway, A., Donahue, R.N. and Goldenberg, D. 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., Okamura, T. and Brüning, J.C. 2009. Hormone and glucose signalling in POMC and AgRP neurons. *J. Physiol.* 587: 5305-5314.
5. Fehér, P., Oláh, M., Bodnár, I., Hechtel, D., Bácskay, I., Juhász, B., Nagy, G.M. and Vecsernyés, M. 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., Kunze, M., Voigtländer, T., Unterberger, U., Regelsberger, G., Bauer, J., Aboul-Enein, F., Garzuly, F., Forss-Petter, S., Bernheimer, H., Berger, J. and Budka, H. 2010. Peroxisomal localization of the proopiomeelanocortin-derived peptides β -lipotropin and beta-endorphin. *Endocrinology* 151: 4801-4810.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

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

PRODUCT

ACTH (h): 293T Lysate represents a lysate of human ACTH transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

ACTH (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive ACTH antibodies. Recommended use: 10-20 μ l per lane.

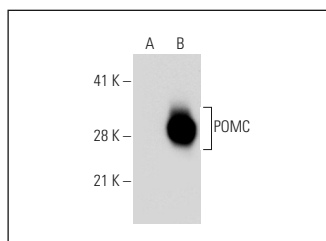
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

ACTH (B427): sc-57021 is recommended as a positive control antibody for Western Blot analysis of enhanced human ACTH expression in ACTH transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

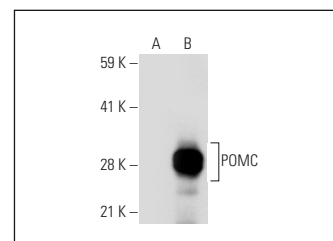
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



ACTH (B427): sc-57021. 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. Western blot analysis of POMC expression in non-transfected: sc-117752 (A) and human POMC transfected: sc-111490 (B) 293T whole cell lysates.

RESEARCH USE

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