SANTA CRUZ BIOTECHNOLOGY, INC.

ACTH/CLIP (F-3): sc-373878

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 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. CLIP is a 21 amino acid neuropeptide secreted by corticotrope cells of adenohypophysis.

REFERENCES

1. Millington, G.W., et al. 2001. Differential effects of α-, β- and γ_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 α-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.

CHROMOSOMAL LOCATION

Genetic locus: POMC (human) mapping to 2p23.3; Pomc (mouse) mapping to 12 A1.1.

SOURCE

ACTH/CLIP (F-3) is a mouse monoclonal antibody raised against a peptide mapping within an internal region of POMC of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACTH/CLIP (F-3) is available conjugated to agarose (sc-373878 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373878 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373878 PE), fluorescein (sc-373878 FITC), Alexa Fluor® 488 (sc-373878 AF488), Alexa Fluor® 546 (sc-373878 AF546), Alexa Fluor® 594 (sc-373878 AF594) or Alexa Fluor® 647 (sc-373878 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373878 AF680) or Alexa Fluor® 790 (sc-373878 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373878 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

ACTH/CLIP (F-3) is recommended for detection of POMC and the processed active peptides ACTH and CLIP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 siRNA (m): sc-37278, POMC shRNA Plasmid (h): sc-37277-SH, POMC shRNA Plasmid (m): sc-37278-SH, POMC shRNA (h) Lentiviral Particles: sc-37277-V and POMC shRNA (m) Lentiviral Particles: sc-37278-V.

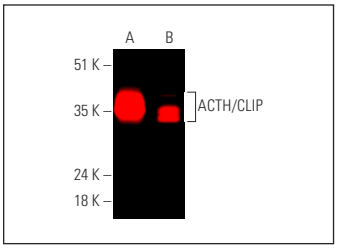
Molecular Weight of POMC precursor: 30 kDa.

Molecular Weight of ACTH: 5 kDa.

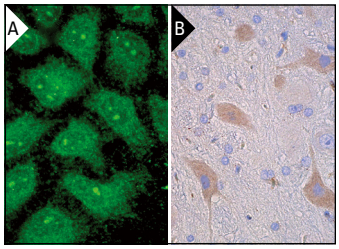
Molecular Weight of CLIP: 3 kDa.

Positive Controls: rat pituitary tissue extract or AtT-20/D16vF2 whole cell lysate: sc-364367.

DATA



ACTH/CLIP (F-3): sc-373878. Near-infrared western blot analysis of ACTH/CLIP expression in rat pituitary tissue extract (**A**) and AtT-20/D16vF2 whole cell lysate (**B**). Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.



ACTH/CLIP (F-3): sc-373878. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat brain tissue showing cytoplasmic staining of neuronal cells (**B**).

SELECT PRODUCT CITATIONS

1. Takeuchi, M., et al. 2019. Molecular analysis and literature-based hypothesis of an immunonegative prostate small cell carcinoma causing ectopic ACTH syndrome. Endocr. J. 66: 547-554.
2. Gan, L., et al. 2020. Chromatin-binding protein PHF6 regulates activity-dependent transcriptional networks to promote hunger response. Cell Rep. 30: 3717-3728.e6.

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.