SANTA CRUZ BIOTECHNOLOGY, INC.

ACTH (B427): sc-57021

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. ACTH is often produced in response to biological stress.

CHROMOSOMAL LOCATION

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

SOURCE

ACTH (B427) is a mouse monoclonal antibody raised against amino acids 1-24 mapping to the N-terminus of ACTH of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ACTH (B427) is recommended for detection of POMC and the processed active peptide ACTH of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

Positive Controls: POMC (h): 293T Lysate: sc-111490, AtT-20/D16vF2 whole cell lysate: sc-364367 or rat pituitary gland extract: sc-364807.

STORAGE

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

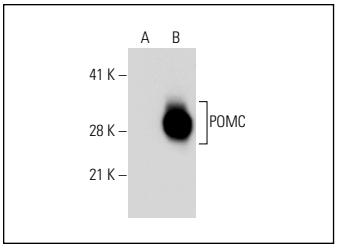
PROTOCOLS

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

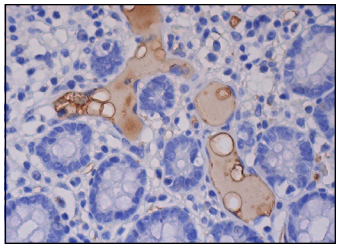
RESEARCH USE

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

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 (B427): sc-57021. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing staining of plasma in blood vessels.

SELECT PRODUCT CITATIONS

1. Gao, P., et al. 2011. Maternal stress affects postnatal growth and the pituitary expression of prolactin in mouse offspring. J. Neurosci. Res. 89: 329-340.
2. Iqbal, M., et al. 2012. Transgenerational effects of prenatal synthetic glucocorticoids on hypothalamic-pituitary-adrenal function. Endocrinology 153: 3295-3307.
3. Simamura, E., et al. 2015. Melanocortins contribute to sequential differentiation and enucleation of human erythroblasts via melanocortin receptors 1, 2 and 5. PLoS ONE 10: e0123232.
4. Raggi, F., et al. 2016. Divergent effects of dioxin- or non-dioxin-like polychlorinated biphenyls on the apoptosis of primary cell culture from the mouse pituitary gland. PLoS ONE 11: e0146729.
5. 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.
6. Lombardero, M., et al. 2020. Effect of thyroxin on cell morphology and hormone secretion of pituitary grafts in rats. Ann. Anat. 230: 151486.
7. Sugiura, A., et al. 2021. Identification of Sox2 and NeuN double-positive cells in the mouse hypothalamic arcuate nucleus and their reduction in number with aging. Front. Aging Neurosci. 12: 609911.
8. Zhang, Q., et al. 2023. Single-cell sequencing identifies differentiation-related markers for molecular classification and recurrence prediction of PitNET. Cell Rep. Med. 4: 100934.
9. Lu, C., et al. 2023. Casein kinase 1α is required to maintain murine hypothalamic pro-opiomelanocortin expression. iScience 26: 106670.

CONJUGATES

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