

# ACTH (O2A3): sc-57018



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 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  $\gamma$ <sub>2</sub>-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. Belgardt, B.F., et al. 2009. Hormone and glucose signalling in POMC and AgRP neurons. *J. Physiol.* 587: 5305-5314.

## CHROMOSOMAL LOCATION

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

## SOURCE

ACTH (O2A3) is a mouse monoclonal antibody raised against amino acids 1-39 of ACTH of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACTH (O2A3) is available conjugated to agarose (sc-57018 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-57018 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-57018 PE), fluorescein (sc-57018 FITC), Alexa Fluor<sup>®</sup> 488 (sc-57018 AF488), Alexa Fluor<sup>®</sup> 546 (sc-57018 AF546), Alexa Fluor<sup>®</sup> 594 (sc-57018 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-57018 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-57018 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-57018 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## STORAGE

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

## APPLICATIONS

ACTH (O2A3) is recommended for detection of POMC and the processed active peptide ACTH of mouse, rat, human and avian 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with ILPH.

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.

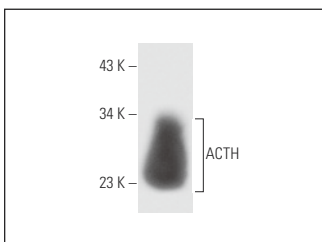
Molecular Weight of ACTH: 5 kDa.

Positive Controls: rat pituitary gland extract: sc-364807.

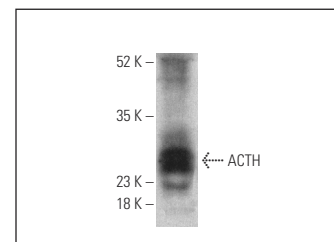
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



ACTH (O2A3): sc-57018. Western blot analysis of ACTH expression in rat pituitary tissue extract.



ACTH (O2A3) HRP: sc-57018 HRP. Direct western blot analysis of ACTH expression in rat pituitary tissue extract.

## SELECT PRODUCT CITATIONS

1. Higashi, A.Y., et al. 2021. Claudin-9 constitutes tight junctions of folliculostellate cells in the anterior pituitary gland. *Sci. Rep.* 11: 21642.

## RESEARCH USE

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