

β-endorphin/Met-enkephalin (C-15): sc-18264

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, 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. β-endorphin is a 31 amino acid active peptide that is expressed primarily in neurons of the hypothalamus and in pituitary gland, while Met-enkephalin is a five amino acid active peptide expressed in the central nervous system (CNS). β-endorphin and Met-enkephalin are both opioid neurotransmitters.

REFERENCES

1. Millington, G.W., et al. 2001. Differential effects of α-, β- and γ₂-melanocyte-stimulating hormones on hypothalamic neuronal activation and feeding in the fasted rat. *Neuroscience* 108: 437-445.
2. Grassel, 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.
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.

CHROMOSOMAL LOCATION

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

SOURCE

β-endorphin/Met-enkephalin (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of POMC of human origin.

PRODUCT

Each vial contains 200 μg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18264 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

β-endorphin/Met-enkephalin (C-15) is recommended for detection of POMC and the processed active peptides Met-enkephalin and β-endorphin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); may cross-react with proenkephalin A, proenkephalin B and their similar processed active peptides.

β-endorphin/Met-enkephalin (C-15) is also recommended for detection of POMC and the processed active peptides Met-enkephalin and β-endorphin in additional species, including canine, bovine and porcine.

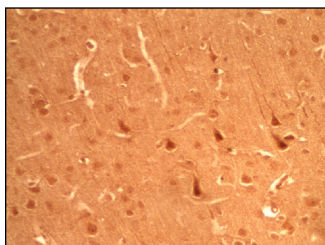
Molecular Weight of POMC precursor: 30 kDa.

Molecular Weight of β-endorphin: 3.4 kDa.

Molecular Weight of Met-enkephalin: 1 kDa.

Positive Controls: Rat brain extract: sc-2392.

DATA



β-endorphin/Met-enkephalin (C-15): sc-18264. Immunoperoxidase staining of formalin-fixed, paraffin-embedded rat brain tissue showing positive stained cells in the cortex. Image kindly provided by Regina Vontell, Adrienne Betz and John Salamone, University of Connecticut.

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 or our catalog for detailed protocols and support products.