# SANTA CRUZ BIOTECHNOLOGY, INC.

# Met-enkephalin (1194/334): sc-80877



The Power to Question

## BACKGROUND

Derived from the proenkephalin A precursor, methionine enkephalin (metenkephalin), also known as opioid growth factor (OGF), is a pentapeptide (tyr-gly-gly-phe-met) that belongs to the opioid neuropeptide precursor family. The proenkephalin precursor proteins are proteolytically processed to form active secreted opioid peptides which function as ligands for the  $\kappa$ type opioid receptors. Met-enkephalin is an endogenous opioid peptide that acts in the central nervous, neuroendocrine and immune systems. Metenkephalin has been characterized as a cytokine due to its non-neurotransmitter function and similarity in activity. Modulation of human lymphocyte proliferation, mononuclear cell locomotion, natural killer cell activity and neutrophil locomotion have been linked to Met-enkephalin involvement. It has been suggested that Met-enkephalin suppresses the production of chemotactic factors by T cells and stimulates chemotaxis in peripheral blood mononuclear cells.

# REFERENCES

- Yoshikawa, K., Williams, C. and Sabol, S.L. 1984. Rat brain preproenkephalin mRNA. cDNA cloning, primary structure, and distribution in the central nervous system. J. Biol. Chem. 259: 14301-14308.
- van Epps, D.E. and Saland, L. 1984. β-endorphin and Met-enkephalin stimulate human peripheral blood mononuclear cell chemotaxis. J. Immunol. 1 32: 3046-3053.
- Brown, S.L. and Van Epps, D.E. 1985. Suppression of T lymphocyte chemotactic factor production by the opioid peptides β-endorphin and Metenkephalin. J. Immunol. 134: 3384-3390.
- 4. Van Epps, D.E. and Kutvirt, S.L. 1987. Modulation of human neutrophil adherence by  $\beta$ -endorphin and Met-enkephalin. J. Neuroimmunol. 15: 219-228.
- Zagon, I.S., Isayama, T. and McLaughlin, P.J. 1994. Preproenkephalin mRN A expression in the developing and adult rat brain. Brain Res. Mol. Brain Res. 21: 85-98.
- Zagon, I.S., Sassani, J.W., Wu, Y. and McLaughlin, P.J. 1998. The autocrine derivation of the opioid growth factor, [Met5]-enkephalin, in ocular surface epithelium. Brain Res. 792: 72-78.
- Marotti, T., Balog, T., Mazuran, R. and Rocic, B. 1998. The role of cytokines in MET-enkephalin-modulated nitric oxide release. Neuropeptides 32: 57-62.
- Liu, X.H., Huang, D.A., Yang, F.Y., Hao, Y.S., Du, G.G., Li, P.F. and Li, G. 2003. A new cytokine: the possible effect pathway of methionine enkephalin. World J. Gastroenterol. 9: 169-173.
- Hwang, S.R., Garza, C., Mosier, C., Toneff, T., Wunderlich, E., Goldsmith, P. and Hook, V. 2007. Cathepsin L expression is directed to secretory vesicles for enkephalin neuropeptide biosynthesis and secretion. J. Biol. Chem. 282: 9556-9563.

## CHROMOSOMAL LOCATION

Genetic locus: PENK (human) mapping to 8q12.

# SOURCE

Met-enkephalin (1194/334) is a mouse monoclonal antibody raised against Met-enkephalin of human origin.

#### PRODUCT

Each vial contains 100  $\mu g~lgG_1$  in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

# **APPLICATIONS**

Met-enkephalin (1194/334) is recommended for detection of Proenkephalin A and the processed active peptide Met-enkephalin of human origin by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with POMC and its similar processed active peptides.

Suitable for use as control antibody for proenkephalin A siRNA (h): sc-45771, proenkephalin A shRNA Plasmid (h): sc-45771-SH and proenkephalin A shRNA (h) Lentiviral Particles: sc-45771-V.

Molecular Weight of proenkephalin A: 31 kDa.

Molecular Weight of enkephalin intermediates: 23/18/8/4.5 kDa.

#### **STORAGE**

Store at 4° C, \*\*D0 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.