BMA BIOMEDICALS
Rheinstrasse 28-32
CH-4302 Augst (Switzerland)
Phone:++41 61 811 6222
Fax: ++41 61 811 6006
info@bma.ch
www.bma.ch

Monoclonal Antibody To Human Defensin 1-3

Marker For Human Neutrophils

Monoclonal antibody DEF-3 recognises a family of cyclic peptides in neutrophils. Four of these peptides are described in humans (HNP-1 to 4), six in rabbits (NP-1 to 5). Synonyms are MCP-1 for NP-1, MCP-2 for NP-2 and corticostatin for NP-3. The function of these peptides apart from their bactericidal, antifungal, and monocyte chemotactic functions is the inhibition of ACTH - induced corticosteroid synthesis. DEF-3 is an important marker for inflammation typing, and for staining mature neutrophils in immunohistochemistry.

Product number: T-1034
Clone: DEF-3
Lot: 06PO0508
TECHNICAL AND ANALYTICAL CHARACTERISTICS:

Host species, subclass:	Mouse IgG1
Quantity:	100µg
Format:	Affinity purified, lyophilized
	Reconstitute by adding 0.5ml distilled water. This stock solution contains 0.2mg/ml IgG, phosphate buffered saline pH 7.2 (PBS), 5mg/ml bovine serum albumin (BSA) as a stabilizer and 0.09% sodium azide as a preservative.
Stability:	Original vial: 1 year at 4° - 8°C
	Stock solution or aliquots thereof: 1 year at -20°C. Avoid repeated thawing and freezing.
Applications:	Tested for immunohistochemistry (IHC); has been described to work in FACS with permeabilized cells.
	Approximate working dilution for IHC: Frozen sections:0. 2µg/ml (1:1000) Paraffin sections: 0.5µg/ml (1:400); Proteinase K pretreatment for antigen retrieval is recommended.
	Optimal dilutions should be determined by the end user.
	Suggested positive control: Human tonsil.
	Please see **www.bma.ch** for protocols and general information.
Immunogen:	Native defensins.
Antigen, epitope:	Several defensins are recognized, the epitope has not been further characterized.

Biological functions: Various functions have been described for defensins. They are antibacterial, antifungal, chemotactic for monocytes, inhibitory for ACTH-induced corticosteroid synthesis and cytotoxic for cells. Defensins are inhibited by glucosaminoglycans (self protection for cells) and high concentrations of Ca^{2+} ions.

Biochemistry: Defensins are a group of cyclic peptides containing 29-35 amino acids (MW < 3500) which tend to form aggregates. The molecules are protease resistant. The defensin content of azurophilic granules in neutrophils is approximately 30% of the total protein.

Specificity: **Human:** Defensin 1-3 (HNP-1 to HNP-3) in human neutrophils. Synthetic defensin-1 and -2 (Bachem, Bubendorf CH) stain also positively. Not tested with Defensin-4. A side reaction to elastin has been observed in humans.

Other: not tested. Defensins have been described in rabbits (NP-1 to NP-5, NP3a = Corticostatin), and in mice (cryptodin).

Selected references

STANFIELD, R.L. et al.: Characterization of Two Crystal Forms of Human Defensin Neutrophil Cationic Peptide 1, a Maturally Occurring Antimicrobial Peptide of Leukocytes. J. Biol. Chem. 263(12), 5933 - 5935 (1988).

GANZ, T. et al.: Defensins: microbicidal and cytotoxic peptides of mammalian host defense cells. Med. Microbiol. Immunol. 181, 99 - 105 (1992).

GANZ, T. et al.: Defensins: Natural Peptide Antibiotics of Human Neutrophils. J. Clin. Invest. 76, 1427 - 1435 (1985).

ELSBACH,P.: Antibiotics from within: antibacterials from human and animal sources. TIBECH 8, **(1990)**.

DAHER, K.A. et al.: Isolation and characterization of human defensin cDNA clones. Proc. Natl. Acad. Sci. 85, 7327 - 7331, (1988).

HILL, C.P. et al.: Crystal Structure of Defensin HNP-3, an Amphilic Dimer: Mechanisms of Membrane Permeabilization. Science, 251, 1481 - 1485 (1991).

SELSTED, M.E. et al.: Primary structures of Three Neutrophil Defensins. J. Clin. Invest. 76, 1436 - 1439, (1985).

SCHLUESENER, H. & Meyermann, R.: Neutrophilic Defensins Penetrate the Blood Brain Barrier. J. Neurosc. Res. 42: 718-723 (1995).

For in vitro research only. Caution: this product contains sodium azide, a poisonous and hazardous substance.