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ProductInformation

Anti-EMAP II
Developed in Rabbit, Affinity isolated antibody

Product Number **E 6404**

Product Description

Anti-EMAP II (Endothelial-Monocyte-Activating Polypeptide II) is developed in rabbit using as immunogen a synthetic peptide derived from an internal region (amino acids 252-262) of mouse EMAP II. The antiserum is affinity purified using epitope-specific affinity chromatography. Anti-EMAP II specifically recognizes a 34 kDa EMAP II precursor, as well as the biologically active cleaved 22 kDa mature protein. The antibody detects mouse recombinant and native EMAP II, and human native EMAP II in immunoblotting, immunocytochemistry and ELISA applications.

EMAP II is a proinflammatory cytokine that activates endothelial cells and causes activation and chemotaxis of neutrophils and mononuclear phagocytes. Human and mouse EMAP II amino acid sequences share 86% identity. EMAP II is synthesized as a 34 kDa precursor molecule that is cleaved to a biologically active 22 kDa mature polypeptide. This active protein is known to induce the procoagulant protein tissue factor on the surface of endothelial cells and modulate other properties of endothelial cells and monocytes *in vitro*, including the stimulation of TNF-α and myeloperoxidase. EMAP II activates neutrophils *in vivo* and induces an inflammatory reaction and tumor regression.[1] *In vivo*, injection of EMAP II into the footpad of mice leads to an inflammatory swelling response, which is characterized by an infiltration of polymorphonuclear granulocytes.

EMAP II may be viewed as the cytokine with dual biological function. In normal cells, EMAP II precursor protein is a component of the synthetase complex, possibly related to its RNA binding capacity. Upon proteolytic cleavage, mature and active EMAP II protein released from tumor cells stimulates inflammatory responses and apoptotic processes.[2,3] In proliferating endothelial cells, EMAP II induces apoptosis and inhibits neovascularization. EMAP II is also a negative modulator of lung vascular growth.[4]

Cleavage experiments with the EMAP II presursor molecule and recombinant caspases have shown that caspase-7 is capable of cleaving the precursor molecule *in vitro*. The caspase-7-mediated generation and release of mature, active EMAP II may provide a mechanism for leukocyte recruitment to sites of programmed cell death, and thus may link apoptosis to inflammation.[5]

Reagent

Anti-EMAP II, at approximately 0.5 mg/ml, is supplied as a solution in phosphate buffered saline, pH 7.2 containing 0.1% sodium azide. The amount of the reagent is sufficient for 10 blots.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

Store at –20 °C. For extended storage, upon initial thawing, freeze in working aliquots. Do not store in frost-free freezers. Avoid repeated freezing and thawing to prevent denaturing the antibody. Working dilution samples should be discarded if not used within 12 hours. The antibody is stable for at least 6 months when stored appropriately.

Product Profile

The recommended working concentration of 0.1 to 0.5 µg/ml is determined by immunoblotting using mouse L929 and RAW 246.7 (macrophage) cells, human Jurkat (lymphocyte), U937 and THP-1 (monocyte) cells. The recommended working concentration is 1.0 to 5.0 µg/ml for Anti-EMAP II used as a coating antibody in ELISA and 0.5 to 1.0 µg/ml in immunocytochemistry application.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Tas, M.P., et al., Cloning and expression of human endothelial-monocyte-activating polypeptide II (EMAP-II) and identification of its putative precursor. Cytokine, **9**, 535-539 (1997).
2. Quevillon, S., et al., The p43 component of the mammalian multi-synthetase complex is likely to be the precursor of the endothelial monocyte-activating polypeptide II cytokine. J. Biol. Chem., **272**, 32573-32579 (1997).
3. Berger, A C. et al., Endothelial monocyte-activating polypeptide II, a tumor-derived cytokine that plays an important role in inflammation, apoptosis, and angiogenesis, J. Immunother., **23**, 519-527 (2000).
4. Schwarz, M., et al., EMAP II: a modulator of neovascularization in the developing lung. Am. J. Physiol., **276**, L365-375 (1999).
5. Behrensdorf, H. A., et al., The endothelial monocyte-activating polypeptide II (EMAP II) is a substrate for caspase-7. FEBS Lett., **466**, 143-147 (2000).

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