

Monoclonal antibody against human alpha-2 Macroglobulin

Product No. ADG0038L

Description

alpha-2 Macroglobulin (α_2 M) is a glycoprotein of approximately 700 kDa consisting of four identical subunits (kDa each). It is a plasma protein found in the blood. It is mainly produced by the liver, and also locally synthesized by macrophages, fibroblasts, and adrenocortical cells.

α_2 M is a broad spectrum proteinase inhibitor inactivating mammalian and even procaryotic endopeptidases of all known classes (serine-, cysteine-, aspartic-, and metallo-type proteases).

It functions as an inhibitor of fibrinolysis by inhibiting plasmin and kallikrein.

When α_2 M interacts with a proteinase, a peptide bond localized within the so-called "bait region" of the inhibitor molecule is cleaved. This cleavage event is followed by a conformational tightening of the enzyme/inhibitor complex leading to the "trapping" of the enzyme. Because of their different electrophoretic mobilities, the noncomplexed α_2 M molecule is termed the "slow" form of α_2 M (α_2 M^s) and the α_2 M /proteinase complex the "fast" form of α_2 M (α_2 M^f).

Properties

The antibody recognizes free/non-complexed α_2 -macroglobulin (slow form) as well as α_2 -macroglobulin /proteinase complexes (fast form).

Preparation

The monoclonal antibody ADG0038L (clone HD-a2M 2) is a murine monoclonal antibody, subclass IgG₁ recognizing the human α_2 -macroglobulin. Mice were immunized with purified native human α_2 -macroglobulin. The antibody has been purified from cell culture supernatant using Protein G affinity chromatography.

Presentation

Screw capped vial containing 1 mg of purified antibody in PBS pH 7.4. The IgG concentration is given on the vial label. Spin the vial briefly before opening.

Storage and Stability

Store the antibody at 2°-8°C. For long-term storage the antibody should be aliquoted and stored at -20°C or colder. It is recommended to avoid freeze-thaw cycles.

Applications

- ELISA ^(2, 5, 6)
- Western-Blot ⁽²⁾
- Immunoprecipitation ^(1, 2, 3)
- Immunohistology (frozen sections) ⁽⁴⁾

Reference

1) The autoimmune blistering skin disease bullous pemphigoid. The presence of plasmin/alpha 2-antiplasmin complexes in skin blister fluid indicates plasmin generation in lesional skin. Kramer MD, Reinartz J. J Clin Invest. 1993 Aug;92(2):978-983.

2) Alpha 2-macroglobulin and alpha 2-macroglobulin/proteinase complexes in human seminal fluid. Kramer MD, Simon MM, Tilgen W, Naher H, Justus CW, Petzoldt D. Fertil Steril. 1992 Feb;57(2):417-421.

3) Plasminogen activation in lesional skin of Pemphigus vulgaris type Neumann. Reinartz J, Naher H, Mai H, Kramer MD. Arch Dermatol Res. 1993;284(8):432-439

4) Immunohistochemical characterization of the plasminogen activator system in psoriatic epidermis. Gissler HM, Frank R, Kramer MD. Br J Dermatol. 1993 Jun;128(6):612-618.

5) Application of novel monoclonal antibodies in the purification, quantification, and immunohistological localization of the proteinase inhibitor alpha2-macroglobulin. Justus C, Mueller S, and Kramer MD. Enzym Microb Technol. 1988, Vol 10:524-531.

6) Quantification of free alpha 2-macroglobulin and alpha 2-macroglobulin-protease complexes by a novel ELISA system based on streptococcal alpha2-macroglobulin receptors. Justus CW, Muller HP, Simon MM, Kramer MD. J Immunol Methods. 1990 Jan 24;126(1):103-108.

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