

****REPRESENTATIVE DATASHEET****
Goat anti-human α_2 Macroglobulin (α_2 M)

Whole IgG from antiserum

10 mg

Product #: GAA2M-IG

Lot #: XXXX

Expiry date: XXXX

 Store at -10 to -20°C

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For Research Use Only.

Not for use in diagnostic procedures.

Description of α_2 Macroglobulin (α_2 M)

α_2 Macroglobulin (α_2 M) is a large proteinase inhibitor molecule of 718,000 daltons, consisting of 4 identical subunits of 185,000 each. Produced in hepatocytes and macrophages, plasma concentrations of α_2 M are typically 2 μM in adults, and as high as 6 μM in childhood. α_2 M has the ability to inhibit most enzymes from the serine, metallo, cysteine and aspartate subclasses. It is not a member of the SERPIN family of inhibitors but belongs to a class of proteins that include pregnancy zone protein (PZP) and the complement proteins C3, C4 and C5. These proteins contain regions of conserved sequence as well as one or more internal β -cysteinyl-glytamyl thiolester bonds, which in the case of α_2 M are susceptible to cleavage by enzymes or by nucleophilic compounds such as methylamine or ammonium ions. Although the precise nature of the interactions is as yet unknown, it is generally thought that cleavage of a bait region within the α_2 M molecule by an enzyme leads to a conformational change, which then traps and/or covalently binds the enzyme^{1,2}. The active site of the trapped enzyme is usually still intact and able to cleave small substrates, but is inaccessible to larger natural substrates. The conformational change induced also exposes receptor-binding regions within the molecule, which may be important in the clearance of α_2 M-enzyme complexes from the circulation. It is thought that the main role of α_2 M *in vivo* is that of a "backup" inhibitor and scavenger of proteinases in blood and in tissues^{3,4}, but it has also been reported to participate in other physiological processes, including regulation of immune function^{1,2}.

REFERENCES and REVIEWS

- Salvesen G, Pizzo SV; Proteinase Inhibitors: α -Macroglobulins, Serpins and Kunins; in **Hemostasis and Thrombosis**, 3rd Edition, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp. 241-258, J.B. Lippincott Co., Philadelphia PA, USA, 1994.
- Barrett J; α_2 Macroglobulin; *Methods in Enzymology*, 80, pp 737-754, 1981
Larsson LJ, Neuenschwander DE, Strickland DK; Reaction of Proteinases with α_2 Macroglobulin: Evidence for Alternate Reaction Pathways in the Inhibition of Trypsin; *Biochemistry* 28, pp 7636-7643, 1989.
- Schmidt B, Mitchell L, Ofosu FA, Andrew M; α_2 Macroglobulin is an Important Progressive Inhibitor of Thrombin in Neonatal and Infant Plasma; *Thromb Haemostas* 62, pp 1074-1077, 1989.
- Hoogendoorn H, Toh CH, Nesheim ME, Giles AR; α_2 Macroglobulin Binds and Inhibits Activated Protein C; *Blood* 78, pp2283-2290, 1991.

Product Specifications
Description:

Vial containing XXXX ml of whole IgG, representing approximately 1 ml of antiserum. Total protein is 10 mg.

Format:

Whole IgG, clear liquid.

Host Animal:

Goat

Immunogen:

 Human α_2 macroglobulin purified from plasma.

Concentration:

 IgG concentration is XXXX mg/ml, determined by absorbance using an extinction coefficient ($E^{1\%}_{280}$) of 13.4.

Buffer:

10 mM HEPES, pH 7.4, 150 mM NaCl, 50% (v/v) glycerol.

Storage:

 Store between -10 and -20°C . Product will become viscous but will not freeze. Avoid storage in frost-free freezers. Keep vial tightly capped. Allow product to warm to room temperature and gently mix before use.

Specificity:

 This antibody is specific for α_2 macroglobulin as demonstrated by immunoelectrophoresis and ELISA.

Applications:

 Suitable for use as a source of antibodies to human α_2 M.

Neutralizing activity:

Not determined

Species Cross Reactivity: (immunodiffusion vs. citrated plasma)

| | | | | | |
|---------|------|--------|------|------|------|
| Human: | XXXX | Mouse: | XXXX | Rat: | XXXX |
| Rabbit: | XXXX | Pig: | XXXX | Dog: | XXXX |

Related Products:

 Cat #: GAA2M-AP Goat anti-human α_2 M, affinity purified IgG

 Cat #: GAA2M-APHRP Goat anti-human α_2 M, APIgG-peroxidase conjugate

 Visit our site (www.affinitybiologicals.com) for details.

Limited Warranty: This product is warranted to perform in accordance with its labeling and literature. Affinity Biologicals Inc. disclaims any implied warranty of merchantability or fitness for any other purposes, and in no event will Affinity Biologicals Inc. be liable for any consequential damages arising out of aforesaid express warranty.

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