

#### DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Human                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects human $\alpha_2$ -Macroglobulin in direct ELISAs and Western blots. In direct ELISAs, less than 2% cross-reactivity with recombinant human $\alpha_2$ -Macroglobulin-like 1 is observed.                                                                            |
| <b>Source</b>             | Polyclonal Goat IgG                                                                                                                                                                                                                                                         |
| <b>Purification</b>       | Antigen Affinity-purified                                                                                                                                                                                                                                                   |
| <b>Immunogen</b>          | Human plasma-derived $\alpha_2$ -Macroglobulin                                                                                                                                                                                                                              |
| <b>Conjugate</b>          | Alexa Fluor 532<br>Excitation Wavelength: 534 nm<br>Emission Wavelength: 553 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

#### APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

|                            |                                                                        |
|----------------------------|------------------------------------------------------------------------|
| <b>Western Blot</b>        | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunocytochemistry</b> | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunoprecipitation</b> | Optimal dilution of this antibody should be experimentally determined. |

#### PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

#### BACKGROUND

Human  $\alpha_2$ -macroglobulin (h $\alpha_2$ M) is a serum glycoprotein that has sequence similarity to other members of the  $\alpha_2$ M family including complement components C3, C4 and C5 (1).  $\alpha_2$ M is synthesized as a polypeptide of 1474 amino acids with a signal peptide (23 residues) (2). The mature protein is a tetramer (720 kDa) of 4 identical subunits (180 kDa), which form two disulfide bond-linked dimers. As a general and irreversible protease inhibitor implicated in many processes,  $\alpha_2$ M is able to inhibit all four classes of proteases by a unique trapping mechanism. The bait region of h $\alpha_2$ M (residues 690-728) contains specific cleavage sites for different proteases. The cleavage of the bait region by a protease induces a conformation change in  $\alpha_2$ M, which then traps and forms a covalent bond with the protease. The trapped protease remains active against small peptide substrates but loses its ability to interact with large protein substrates or inhibitors.

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