SANTA CRUZ BIOTECHNOLOGY, INC.

α-2M (H-8): sc-390544

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

α-2-Macroglobulin (α-2M) is a homotetrameric serum protein consisting of four identical subunits that form dimers through disulfide bonds. Initially, α-2M was characterized as a pan-proteinase inhibitor that was able to "bait" proteinases into cleaving specific peptide sequences on α-2M. This interaction induces a conformational change in α-2M, thus enabling it to "trap" the proteinase and further inhibit its activity. Subsequently, α-2M has been shown to function as a carrier protein and regulator of cytokines during inflammation. Circulating transforming growth factor β (TGFβ) in serum is primarily bound to α-2M, which renders TGFβ inactive. α-2M also binds to IL-6 and, thereby, increases the concentration of IL-6 near lymphocytes, hepatocytes and stem cells involved in mediating the inflammatory cascade. Mutations and deletions in the gene encoding α-2M are associated with an increased incidence of Alzheimer's disease (AD), which is consistent with the role of α-2M in mediating the clearance and degradation of Aβ, the major component of β-Amyloid deposits accumulated during AD.

CHROMOSOMAL LOCATION

Genetic locus: A2M (human) mapping to 12p13.31.

SOURCE

α-2M (H-8) is a mouse monoclonal antibody raised against amino acids 413-469 mapping within an internal region of α-2M of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

α-2M (H-8) is available conjugated to agarose (sc-390544 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390544 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390544 PE), fluorescein (sc-390544 FITC), Alexa Fluor® 488 (sc-390544 AF488), Alexa Fluor® 546 (sc-390544 AF546), Alexa Fluor® 594 (sc-390544 AF594) or Alexa Fluor® 647 (sc-390544 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390544 AF680) or Alexa Fluor® 790 (sc-390544 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

α-2M (H-8) is recommended for detection of α-2M of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for α-2M siRNA (h): sc-40297, α-2M shRNA Plasmid (h): sc-40297-SH and α-2M shRNA (h) Lentiviral Particles: sc-40297-V.

Molecular Weight of α-2M tetrameric protein: 718 kDa.

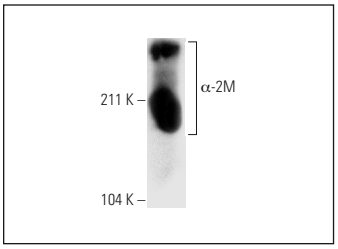
Molecular Weight of α-2M subunits: 185 kDa.

Positive Controls: human plasma extract: sc-364374.

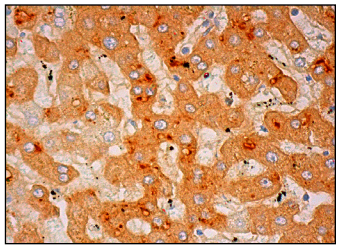
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



α-2M (H-8): sc-390544. Western blot analysis of α-2M expression in human plasma.



α-2M (H-8): sc-390544. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. McNally, A.K. and Anderson, J.M. 2015. Phenotypic expression in human monocyte-derived interleukin-4-induced foreign body giant cells and macrophages *in vitro:* dependence on material surface properties. J. Biomed. Mater. Res. A 103: 1380-1390.
2. Zarà, M., et al. 2018. Molecular mechanisms of platelet activation and aggregation induced by breast cancer cells. Cell. Signal. 48: 45-53.
3. Lee, J., et al. 2022. α-2-Macroglobulin as a novel diagnostic biomarker for human bladder cancer in urinary extracellular vesicles. Front. Oncol. 12: 976407.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.