IgG (D-1): sc-515946

SANTA CRUZ® BIOTECHNOLOGY

The Power to Question

BACKGROUND

IgG is a monomeric immunoglobulin. It is the most abundant immunoglobulin and is found in the blood and extracellular fluid. There are four subclasses of IgG: IgG_1, IgG_2, IgG_3 and IgG_4. IgG is composed of two heavy chains (γ chains) and two light (κ or λ) chains. The chains form two domains, the Fab (antigen binding) fragment and the Fc (constant) fragment. Each IgG Fab fragment has two antigen binding sites. IgG molecules are involved in secondary immune response. They bind to several different kinds of pathogens, such as viruses, bacteria and fungi, and protect the body by complement activation (the classic pathway), opsonization for phagocytosis and neutralization of toxins. In addition, IgG is the only isotype that can pass through the placenta, thereby providing protection to the fetus in the first weeks of life, before the immune system of the fetus has developed.

CHROMOSOMAL LOCATION

Genetic locus: IGHG3 (human) mapping to 14p13.

SOURCE

IgG (D-1) is a mouse monoclonal antibody raised against amino acids 21-290 mapping at the C-terminus of IgG_3 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.

IgG (D-1) is available conjugated to agarose (sc-515946 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515946 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515946 PE), fluorescein (sc-515946 FITC), Alexa Fluor® 488 (sc-515946 AF488), Alexa Fluor® 546 (sc-515946 AF546), Alexa Fluor® 594 (sc-515946 AF594) or Alexa Fluor® 647 (sc-515946 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515946 AF680) or Alexa Fluor® 790 (sc-515946 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

IgG (D-1) is recommended for detection of all IgG isotypes 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).

Molecular Weight of IgG light chain: 25 kDa.

Molecular Weight of IgG heavy chain: 50 kDa.

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
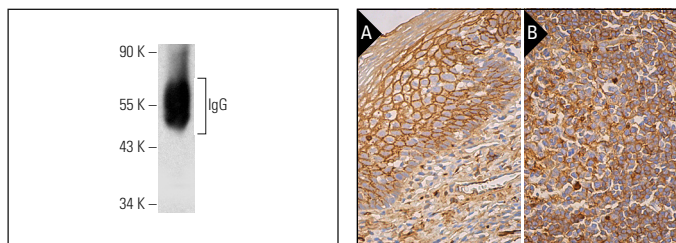
IgG (D-1): sc-515946. Western blot analysis of normal human IgG in reducing conditions.

IgG (D-1): sc-515946. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing membrane and cytoplasmic staining of squamous epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing membrane and cytoplasmic staining of cells in germinal center and cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 2020. The lncRNA H19 alleviates muscular dystrophy by stabilizing dystrophin. Nat. Cell Biol. 22: 1332-1345.

2. Chen, H., et al. 2020. Identification of "antigen-specific" neutrophils in atherosclerosis patients that compromise vascular endothelial barrier function. Am. J. Transl. Res. 12: 6827-6840.

3. An, Y.F., et al. 2021. Role of Fc γ RI in antigen-dependent eosinophil activation in patients with allergic rhinitis. Am. J. Rhinol. Allergy 35: 86-97.

4. He, C., et al. 2022. Crosstalk of renal cell carcinoma cells and tumor-associated macrophages aggravates tumor progression by modulating muscleblind-like protein 2/B-cell lymphoma 2/beclin 1-mediated autophagy. Cytotherapy. E-published.

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.