Ig J chain (F-12): sc-133177

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

The regions of relatively constant sequence beyond the variable regions of Immunoglobulin are termed constant regions (C regions) and are present in both the heavy and light chains. With few exceptions, the sites of attachment for carbohydrates to immunoglobulin are located in the constant region. The constant regions also serve to hold the variable regions on both heavy and light chain together by virtue of the disulfide bond between them. The immunoglobulin J chain (Ig J chain) is a linker protein for two monomer units of either immunoglobulin α (IgA) or μ (IgM) polypeptides. For IgA the J chained-joined dimer induces larger polymers whereas for the IgM pentamer it functions as a nucleating unit. The Ig J chain is also important in binding these immunoglobulins to secretory components.

CHROMOSOMAL LOCATION

Genetic locus: JCHAIN (human) mapping to 4q13.3.

SOURCE

Ig J chain (F-12) is a mouse monoclonal antibody raised against amino acids 23-159 representing full length Ig J chain of human origin.

PRODUCT

Each vial contains 200 µg IgG$_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ig J chain (F-12) is available conjugated to agarose (sc-133177 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-133177 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133177 PE), fluorescein (sc-133177 FITC), Alexa Fluor® 488 (sc-133177 AF488), Alexa Fluor® 546 (sc-133177 AF546), Alexa Fluor® 594 (sc-133177 AF594) or Alexa Fluor® 647 (sc-133177 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133177 AF680) or Alexa Fluor® 790 (sc-133177 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

Ig J chain (F-12) is recommended for detection of Ig J chain 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 Ig J chain siRNA (h): sc-45773, Ig J chain shRNA Plasmid (h): sc-45773-SH and Ig J chain shRNA (h) Lentiviral Particles: sc-45773-V.

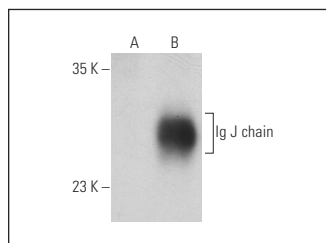Molecular Weight (predicted) of Ig J chain: 18 kDa.

Molecular Weight (observed) of Ig J chain: 18-26 kDa.

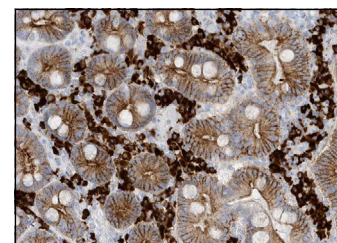Positive Controls: Ig J Chain (h): 293T Lysate: sc-115510.

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

Ig J chain (F-12) HRP: sc-133177 HRP. Direct western blot analysis of Ig J chain expression in non-transfected: sc-117752 (**A**) and human Ig J Chain transfected: sc-115510 (**B**) 293T whole cell lysates.

Ig J chain (F-12): sc-133177. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Cai, A., et al. 2013. Atorvastatin treatment of rats with ischemia-reperfusion injury improves adipose-derived mesenchymal stem cell migration and survival via the SDF-1α/CXCR-4 axis. PLoS ONE 8: e79100.

2. Krawczyk, K.M., et al. 2019. Localization and regulation of polymeric Ig receptor in healthy and diseased human kidney. Am. J. Pathol. 189: 1933-1944.

3. Buhre, J.S., et al. 2022. mRNA vaccines against SARS-CoV-2 induce comparably low long-term IgG Fc galactosylation and sialylation levels but increasing long-term IgG$_4$ responses compared to an adenovirus-based vaccine. Front. Immunol. 13: 1020844.

STORAGE

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

PROTOCOLS

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

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