Order online now!

www.rockland.com
tech@rockland.com
+1 484.791.3823

Datasheet for 009-0102

Human IgG

Overview

Description:	Human IgG Whole Molecule - 009-0102
Item No.:	009-0102
Size:	10 mg
Applications:	ELISA, SDS-PAGE, Biochemical Assay, IF, WB
Origin:	Human

Product Details

Background:	Human IgG purified protein (Immunoglobulin G) are antibody molecules. Human IgG is composed of four peptide chains — two heavy chains gamma and two light chains. Human IgG has two antigen binding sites. Other Immunoglobulins may be described in terms of polymers with the IgG structure considered the monomer. Human IgG typically constitutes 75% of serum immunoglobulins. Human IgG molecules are synthesized and secreted by plasma B cells.
Synonyms:	Human IgG whole molecule, Human Immunoglobulin G
Species of Origin:	Human
Format:	IgG
Type:	Native Protein

Target Details

Purity/Specificity:	IgG was prepared from normal human serum by a multi-step process which includes delipidation, salt fractionation and ion exchange chromatography followed by extensive dialysis against the buffer stated above. Assay by immunoelectrophoresis resulted in a single precipitin arc against anti-Human IgG and anti-Human Serum.
Relevant Links:	• 009-0102 SDS

Application Details

Tested Applications:	ELISA, SDS-PAGE

Suggested Applications:	Biochemical Assay, IF, WB (Based on references)
Application Note:	Human IgG whole molecule has been tested by SDS-Page and ELISA and can be utilized as a control or standard reagent in Western Blotting, Flow, and ELISA experiments.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:10,000 - 1:50,000
FC:	1:500
WB:	1:1,000 - 1:5,000

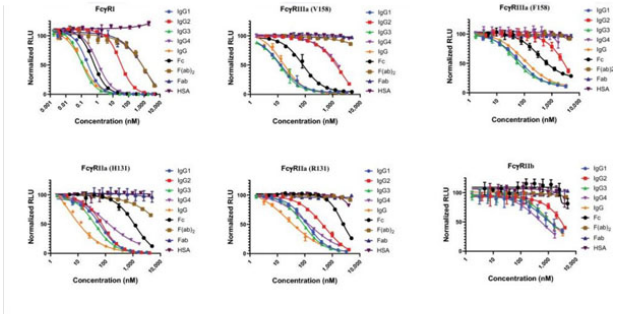
Formulation

Physical State:	Lyophilized
Concentration:	10.88 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None
Reconstitution Volume:	1.0 mL
Reconstitution Buffer:	Restore with deionized water (or equivalent)

Shipping & Handling

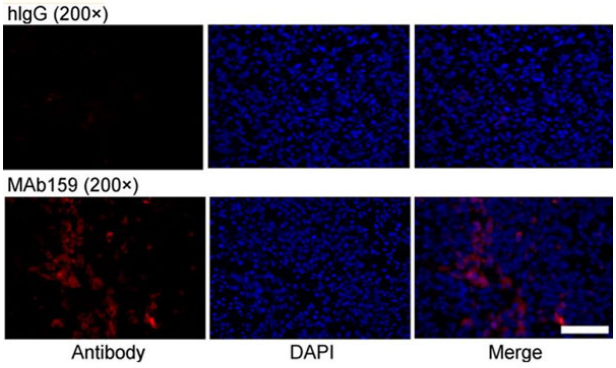
Shipping Condition:	Ambient
Storage Condition:	Store Human IgG at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Images

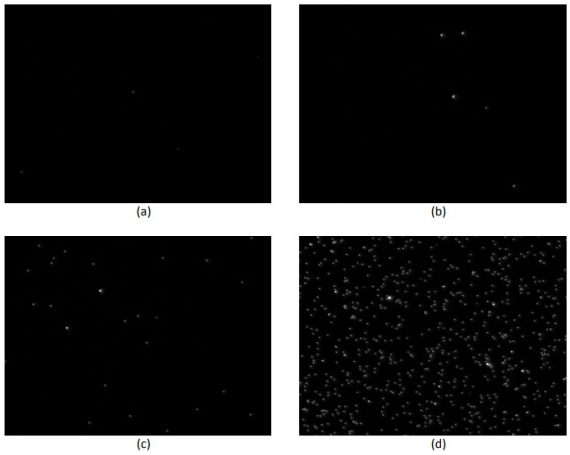


	IgG1	IgG2	IgG3	IgG4	IgG	Fc
FcγRI	0.23	29.40	0.09	1.07	0.11	0.56
FcγRIIa (H131)	67.04	77.12	40.78	102.20	4.64	1198.00
FcγRIIa (R131)	122.30	518.80	85.03	127.50	25.81	2284.00
FcγRIIb*	n.d.	n.d.	819.30	573.10	988.80	n.d.
FcγRIIIa (V158)	12.33	2045.00	12.28	n.d.	15.70	81.04
FcγRIIIa (F158)	65.04	n.d.	44.80	n.d.	99.39	342.30

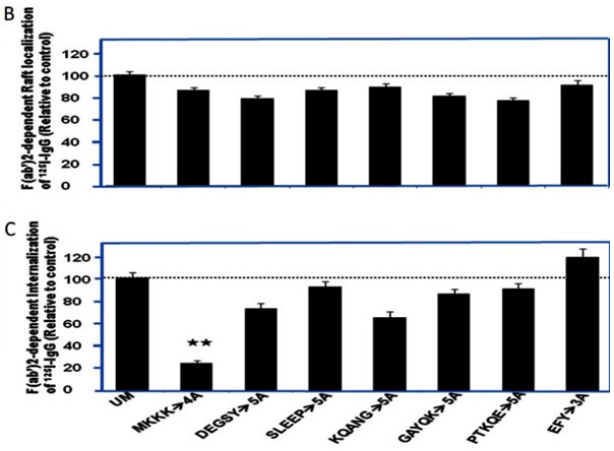
Figure
Dose dependent inhibition curves generated with six different FcγR assays. Four different set of samples were tested to show the specificity and subclass specific binding. Analytes tested are (1) human IgG subclasses IgG1, IgG2, IgG3, IgG4; (2) human IgG; (3) Fc, Fab, and F(ab)2 domains; and (4) human serum albumin (HSA). Data represent the mean ± standard error of triplicate experiments. IC50 (nM) values calculated from the inhibition curves are shown in the Table. IC50 values are in nM. *For FcγRIIb IC50 values are intended only for qualitative purposes as mentioned in the text. n.d. not determined. Figure 3. PMID: 35842448.



Immunofluorescence Microscopy
Antibody distribution analysis on BXPC3 tumor sections 48 h after injection of hIgG or MAb159. Scale bar = 100 µm. DAPI 5 4′-6-diamidino-2-phenylindole. Figure 6. PMID: 25908833.

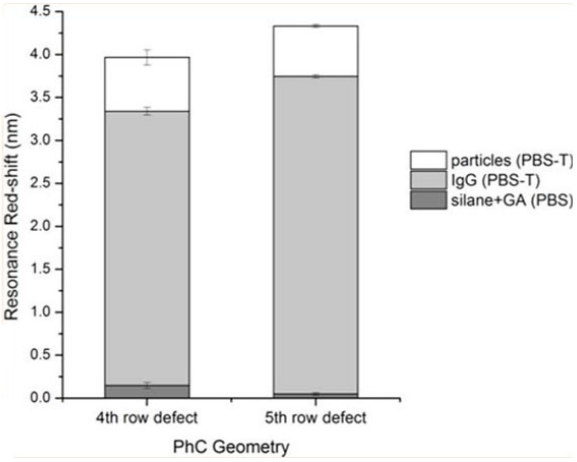


Immunofluorescence Microscopy
Representative optical microscopy images of the Si/SiO2 chip incubated with 1:100 dilution of human IgG-modified fluorescent latex particle solution along the different steps of surface functionalization. (a) Piranha cleaned chip surface, (b) silane (APDMES) and glutaraldehyde modified surface, (c) silane and glutaralehyde modified chip subsequently blocked with BSA, and (d) silane/GA modified chip functionalized with goat anti-human IgG. All images are at the same exposure. Figure S3. PMID: 28357424.



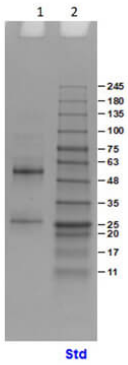
Figure

Alanine scanning mutagenesis identifies a single highly conserved juxtamembrane motif, MKKK, in the syndecan-1 cytoplasmic tail as essential for efficient endocytosis after clustering. B and C, raft localization and internalization triggered by clustering. The ligand for FcR-Synd1, 125I-labeled nonimmune human IgG, was bound at 4 °C to the surface of the McArdle cell lines described in A. Unbound material was washed away, and then the cells were incubated for 1 h at 37 °C in the absence or presence of our clustering agent (goat F(ab')2 against human IgG Fab). Raft localization was assessed by cold Triton insolubility and internalization by resistance to an acid wash that releases surface-bound IgG. Displayed are clustering-dependent raft localization (B) and internalization of ligand (C), normalized to control values from cells expressing the unmutated chimera (mean ± S.E., n = 3). Non-normalized control values were 433.91 ± 26.24 ng/mg that moved into rafts and 416.38 ± 14.15 ng/mg that became internalized (total cell-associated ligand was 850.29 ± 18.2 ng/mg). The horizontal dotted lines represent the mean values from UM FcR-Synd1-expressing cells. B, $p > 0.5$ by ANOVA. C, *, $p < 0.01$ by ANOVA; **, $p < 0.01$ compared with the UM value by the Dunnett test. The data are representative of a total of three independent catabolism experiments. Fig 1. PMID: 23525115.



Figure

Sensor response to biomolecule functionalization and biomolecule-mediated particle detection. Resonance wavelength shifts were determined for PhC geometries in which the large-defect structure was centered 4 or 5 rows from the W1 waveguide after sequentially exposing the sensors to silane+GA, IgG molecules, and anti-IgG-coupled latex microspheres. The cover medium was either PBS, or PBS with 0.1% Tween-20 (PBS-T), as indicated in the legend. Error bars were calculated as the root-sum-of-squares of the standard deviations of the mean for baseline and experimental measurements. Mean resonance wavelengths and standard deviations were calculated from 5 replicate spectrum scans for all steps except for the particle/PBS-T step, in which only 3 scans each were collected for each PhC to minimize the opportunity for analyte dissociation. Fig 4. PMID: 28357424.



SDS-PAGE
SDS-PAGE of Human IgG. Lane 1: Reduced Human IgG. Lane 2: 5µL OPAL Pre-stained Marker MB-210-0500. Load: 1µg per lane. Predicted/Observed size: Non-reduced at 180-245 kDa , Reduced at 55, 25 kDa.

References

- Nath, N et al. A homogeneous bioluminescent immunoassay for parallel characterization of binding between a panel of antibodies and a family of Fcγ receptors. *Scientific Reports* (2022)
- Stoltenburg R et al. Refining the Results of a Classical SELEX Experiment by Expanding the Sequence Data Set of an Aptamer Pool Selected for Protein A. *Int J Mol Sci.* (2018)
- Baker JE et al. Recognition-mediated particle detection under microfluidic flow with waveguide-coupled 2D photonic crystals: towards integrated photonic virus detectors. *Lab Chip.* (2017)
- Wang, H et al. Small-Animal PET Imaging of Pancreatic Cancer Xenografts Using a 64Cu-Labeled Monoclonal Antibody, MAb159. *Journal of Nuclear Medicine : Official Publication, Society of Nuclear Medicine* (2015)
- Li, D et al. Targeting the EphB4 receptor for cancer diagnosis and therapy monitoring. *Molecular Pharmaceutics* (2013)
- Chen K et al. Molecular mediators for raft-dependent endocytosis of syndecan-1, a highly conserved, multifunctional receptor. *J Biol Chem.* (2013)

Disclaimer

No test method can provide total assurance that the hepatitis B virus, hepatitis C virus, human immunodeficiency virus, or any other infectious agents are absent. Thus, all blood products, including purified proteins derived from human blood sources, should be handled at Biosafety Level 2 as recommended by the CDC\NIH manual entitled Biosafety in Microbiological and Biomedical Laboratories for potentially infectious human serum, blood specimens or proteins derived from same. Source material for the human blood product supplied to your facility has been tested for the detection of HIV antibody, Hepatitis B surface antigen, antibody to Hepatitis C, HIV 1 antigen(s), antibody to HTLV - I/II, and syphilis by FDA guidelines. All units were found to be non-reactive/negative for these tests. All human blood source material is collected in FDA licensed centers and is tested with FDA approved test kits.

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.