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Datasheet for 009-0105

# Human IgG Fab

## Overview

| | |
|---|---|
| **Description:** | Human IgG Fab Fragment - 009-0105 |
| **Item No.:** | 009-0105 |
| **Size:** | 2 mg |
| **Applications:** | SDS-PAGE, Biochemical Assay |
| **Origin:** | Human |

## Product Details

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|---|---|
| **Background:** | Secreted as part of the adaptive immune response by plasma B cells, immunoglobulin G constitutes 75% of serum immunoglobulins. Immunoglobulin G binds to viruses, bacteria, as well as fungi and facilitates their destruction or neutralization via agglutination (and thereby immobilizing them), activation of the compliment cascade, and opsonization for phagocytosis. The F(ab) fragment is the portion of the antibody that binds to the antigen target. The immunoglobulin Fab also possesses one constant and one variable region of both the heavy and light chain. |
| **Synonyms:** | Human Immunoglobulin Fab, F(ab), Fragment antigen-binding |
| **Species of Origin:** | Human |
| **Format:** | IgG Fab |
| **Type:** | Native Protein |

## Target Details

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| **Purity/Specificity:** | Human IgG Fab fragment was prepared from normal serum by a multi-step process which includes delipidation, salt fractionation and ion exchange chromatography followed by papain digestion and extensive dialysis against the buffer stated above. Human IgG Fab fragment assayed by immunoelectrophoresis resulted in a single precipitin arc against anti-Human Serum, anti- Human IgG and anti- Human IgG F(ab')2. No reaction was observed against anti- Human IgG F(c) or anti-Papain. |
| **Relevant Links:** | • 009-0105 SDS |

## Application Details

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|---|---|
| **Tested Applications:** | SDS-PAGE |
| **Suggested Applications:** | Biochemical Assay (Based on references) |
| **Application Note:** | Human IgG Fab Fragment has been tested in SDS-Page and can be utilized as a control or standard reagent in Western Blotting and ELISA experiments. |
| **Assay Dilutions:** | All assays should be optimized by the user. Recommended dilutions (if any) may be listed below. |

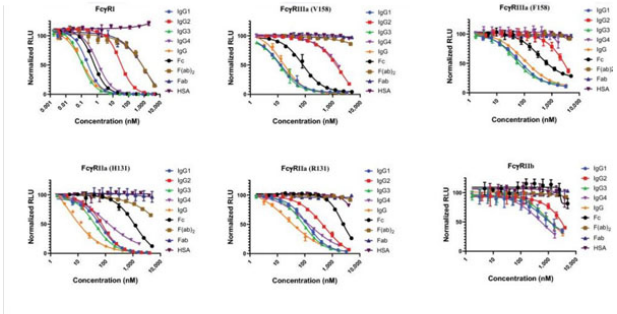
## Formulation

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|---|---|
| **Physical State:** | Liquid (sterile filtered) |
| **Concentration:** | 2 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 |

## Shipping & Handling

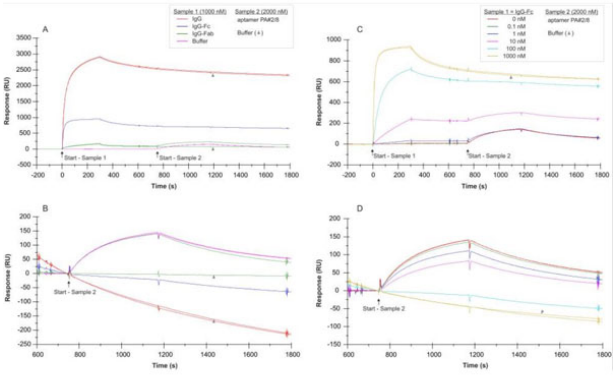
| | |
|---|---|
| **Shipping Condition:** | Wet Ice |
| **Storage Condition:** | Store vial at 4° C prior to opening. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use. For extended storage, aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. |
| **Expiration:** | Expiration date is one (1) year from date of receipt. |

## Images

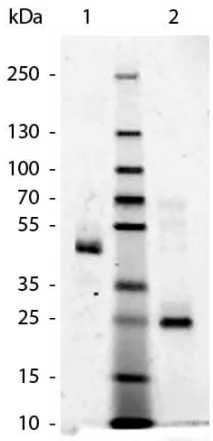


| | IgG1 | IgG2 | IgG3 | IgG4 | IgG | Fc |
|---|---|---|---|---|---|---|
| FcγRI | 0.23 | 29.40 | 0.09 | 1.07 | 0.11 | 0.56 |
| FcγRIIa (H131) | 67.04 | 77.12 | 40.78 | 102.20 | 4.64 | 1198.00 |
| FcγRIIa (R131) | 122.30 | 518.80 | 85.03 | 127.50 | 25.81 | 2284.00 |
| FcγRIIb* | n.d. | n.d. | 819.30 | 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 |

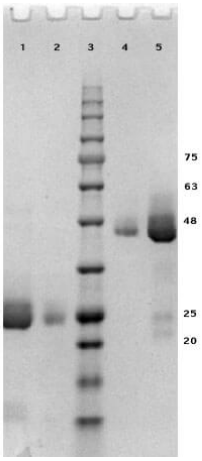
**Figure**
Dose dependent inhibition curves generated with six different FcγR assays. Four different set of samples were tested to show the specificity and subclass specific binding. Analytes tested are (1) human IgG subclasses IgG1, IgG2, IgG3, IgG4; (2) human IgG; (3) Fc, Fab, and F(ab)2 domains; and (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.



**Surface Plasmon Resonance (SPR)**
SPR interaction analyses regarding the aptamer binding site in Protein A.Biacore X100 / sensor chip CAP / ligand: biotinylated Protein A with immobilization level of ~560 RU / two-step analyte binding without regeneration in between, (A-B) analyte 1 = sample 1: human IgG, IgG-Fc fragment, IgG-Fab fragment with a concentration of 1000 nM each, or buffer, (C-D) analyte 1 = sample 1: concentration series of human IgG-Fc in the range of 0–1000 nM, (A-D) analyte 2 = sample 2: 2000 nM 5'-fluorescein-labeled aptamer PA#2/8 or buffer. Double-referenced sensorgrams are shown (blank reference surface without Protein A, buffer injection). Binding of sample 1 followed by sample 2 is shown in (A) and (C) with alignment to injection start of sample 1. In (B) and (D) only binding of sample 2 with alignment to injection start of sample 2 is shown. Fig 12. PMID: 26221730.




**SDS-PAGE**
SDS-Page of Human Fab. Lane 1: Human Fab - Non-Reduced. Lane 2: Human Fab - Reduced. Load: 1.0 ug per lane. Predicted/Observed size - Non-Reduced: 50 kDa, 50 kDa for Human Fab. Predicted/Observed size - Reduced: 25 kDa, 25 kDa for Human Fab. Other band(s): None.




**SDS-PAGE**
SDS-PAGE results of Human IgG Fab Fragment. Lane 1: reduced Human IgG Fab Fragment (5ug). Lane 2: reduced Human IgG Fab Fragment (1ug). Lane 3: Opal Prestained Molecular Weight Ladder (p/n MB-210-0500). Lane 4: non-reduced Human IgG Fab Fragment (1ug). Lane 5: non-reduced Human IgG Fab Fragment (5ug). 4-20% Lonza SDS-PAGE; Coomassie Stained; BioRad ChemiDoc Imaged.

## References


- Huang C et al. Age-independent anti-angiogenic therapy for choroidal neovascularization by targeting secretogranin III. *Geroscience.* (2026)
- Chanakul W et al. Large and Stable Nanopores Formed by Complement Component 9 for Characterizing Single Folded Proteins. *ACS Nano.* (2025)
- 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. In vitro Selection and Interaction Studies of a DNA Aptamer Targeting Protein A. *PloS One* (2015)


## 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.

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