# PRODUCT INFORMATION

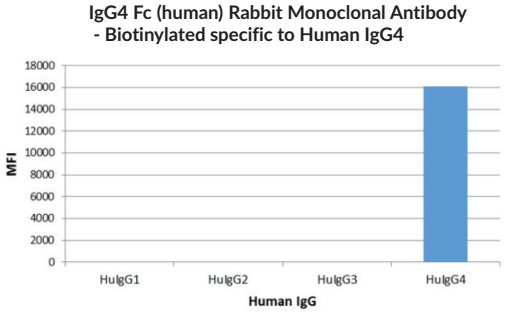
## IgG4 Fc (human) Rabbit Monoclonal Antibody - Biotinylated (RM217)

*Item No. 32164*

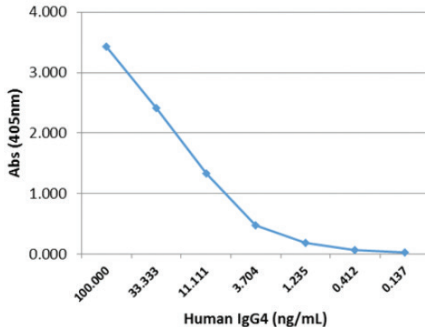
### Overview and Properties

| | |
|---|---|
| **Contents:** | This vial contains 50 µg of protein A-affinity purified monoclonal antibody. |
| **Synonym:** | Immunoglobulin G4 |
| **Immunogen:** | Peptide from the Fc region of human IgG4 |
| **Cross Reactivity:** | (+) IgG4; (-) Human IgG1, IgG2, IgG3, IgM, IgA, IgD, IgE; (-) Goat, mouse, rat IgG |
| **Species Reactivity:** | (+) Human |
| **Form:** | Liquid |
| **Storage:** | -20°C (as supplied) |
| **Stability:** | ≥1 year |
| **Storage Buffer:** | PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide |
| **Clone:** | RM217 |
| **Host:** | Rabbit |
| **Isotype:** | IgG |
| **Applications:** | ELISA; is 50-200 ng/well for ELISA (capture) and 0.05-0.2 µg/ml for ELISA (detection). Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically. |

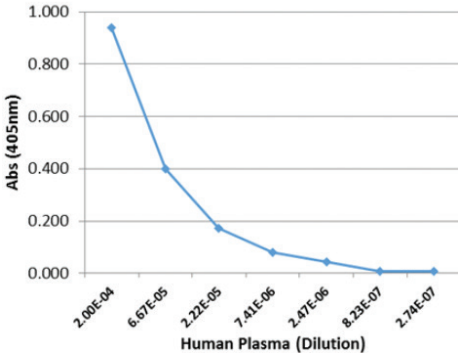
### Images



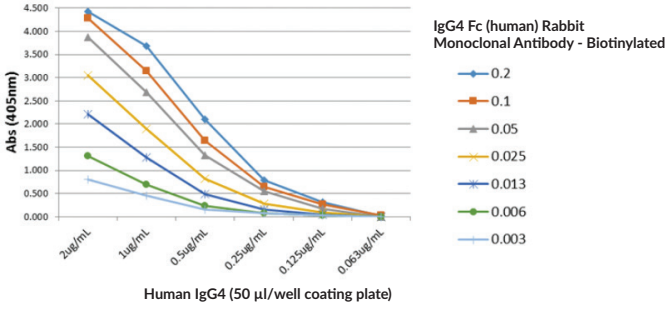

IgG4 Fc (human) Rabbit Monoclonal Antibody - Biotinylated (RM217) reacts to human IgG4. No cross reactivity with human IgG1, IgG2, and IgG3.




Detection of human IgG4 via sandwich ELISA using IgG4 Fc (human) Rabbit Monoclonal Antibody - Biotinylated (RM217) as the capture antibody and biotinylated anti-human light chains (κ+ λ) antibody as the detection antibody, followed by an AP-conjugated streptavidin.




Detection of human IgG4 sandwich ELISA using IgG4 Fc (human) Rabbit Monoclonal Antibody - Biotinylated (RM217) as the capture antibody and biotinylated anti-human light chains (κ+ λ) antibody as the detection antibody, followed by an AP-conjugated




A titer ELISA using IgG4 Fc (human) Rabbit Monoclonal Antibody - Biotinylated (RM217). The plate was coated with different amounts of human IgG4. A serial dilution of IgG4 Fc (human) Rabbit Monoclonal Antibody - Biotinylated (RM217) was used as the primary antibody. An alkaline phosphatase-conjugated anti-rabbit IgG was used as the secondary antibody.




CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION

## Description

Immunoglobulin G (IgG) is a member of the immunoglobulin superfamily of glycoproteins that plays a central role in the adaptive immune response.[1] It is produced by B cells and later secreted by plasma cells and is the most abundant circulating antibody in human and mouse serum.[1,2,6] IgG consists of two heavy chains of approximately 50 kDa each and two light chains of approximately 25 kDa each.[1] The heavy chains are linked together by disulfide bonds to form an Fc region and also combine with the light chains to form the Fab region, which mediate receptor and antigen binding, respectively.[3] IgG is produced following IgM class-switching in response to infection and is involved in numerous humoral host defense responses, including antibody-dependent cell-mediated cytotoxicity (ADCC), toxin neutralization, and pathogen opsonization.[2] IgG exists as four isotypes in humans, IgG1, IgG2, IgG3, and IgG4, each of which has a distinct effector function. IgG4 is the least predominant IgG isotype in human serum and contains a serine at position 228 in its hinge region that facilitates Fab arm exchange, resulting in two antigen-binding sites and a functionally monovalent antibody.[7] Increased serum levels of IgG4 positively correlate with desensitization and allergen tolerance in beekeepers, laboratory workers chronically exposed to rodent allergens, and individuals undergoing allergy immunotherapy for severe allergies to cats, dust mites, birch pollen, and wasps. Cayman's IgG4 Fc (human) Rabbit Monoclonal Antibody - Biotinylated (RM217) can be used for ELISA. The antibody recognizes the Fc region of IgG4 from human samples.

## References


1. Schroeder, H.W., Jr. and Cavicini, L. Structure and function of immunoglobulins. *J. Allergy Clin. Immunol.* **125(2 Suppl. 2)**, S41-52 (2010).
2. Vidarsson, G., Dekkers, G., and Rispens, T. IgG subclasses and allotypes: From structure to effector functions. *Front. Immunol.* **5**, 520 (2014).
3. Vaillant, A.A.J and Ramphul, K. Immunoglobulin. In: StatPerals [Internet]. Treasure Island (FL): StatPearls Publishing (2020). Available from: https://www.ncbi.nlm.nih.gov/books/NBK513460/
4. Collins, A.M. IgG subclass co-expression brings harmony to the quartet model of murine IgG function. *Immunol. Cell Biol.* **94(10)**, 949-954 (2016).
5. Lu, R.-M., Hwang, Y.-C., Liu, I.-J., *et al.* Development of therapeutic antibodies for the treatment of diseases. *J. Biomed. Sci.* **27(1)**, 1 (2020).
6. Mayumi, M., Kuritani, T., Kubagawa, H.M., *et al.* IgG subclass expression by human B lymphocytes and plasma cells: B lymphocytes precommitted to IgG subclass can be preferentially induced by polyclonal mitogens with T cell help. *J. Immunol.* **130(2)**, 671-677 (1983).
7. Trampert, D.C., Hubers, L.M., van de Graaf, S.F.J., *et al.* On the role of IgG4 in inflammatory conditions: lessons for IgG4-related disease. *Biochim. Biophys. Acta Mol. Basis Dis.* **1864(4 Pt. B)**, 1401-1409 (2018).



CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM