

# PRODUCT INFORMATION



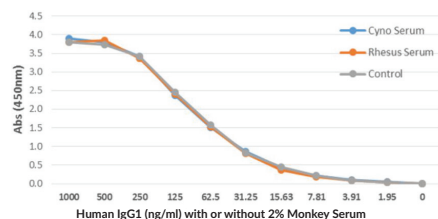
## IgG1 (human) Monoclonal Antibody (Clone RM117)

Item No. 32119

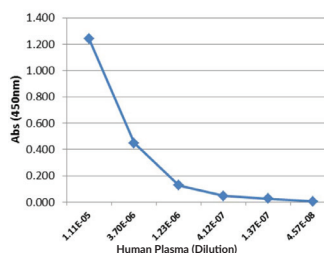
### Overview and Properties

**Contents:** This vial contains 100 µg of protein A-affinity purified monoclonal antibody.  
**Synonym:** Immunoglobulin G1  
**Immunogen:** Peptide corresponding to the hinge region of human IgG1  
**Cross Reactivity:** (-) Human IgG2, IgG3, IgG4, IgM, IgA, IgD, IgE; (-) Cynomolgus monkey, goat, mouse, rat, rhesus monkey 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  
**Concentration:** 1.0 mg/ml  
**Clone:** RM117  
**Host:** Rabbit  
**Isotype:** IgG  
**Applications:** ELISA, Immunocytochemistry (ICC), and Immunohistochemistry (IHC); the recommended starting concentration for ELISA is 50-200 ng/well (for capture) and 0.05-0.2 µg/ml (for detection), and 0.5-2 µg/ml for ICC and IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

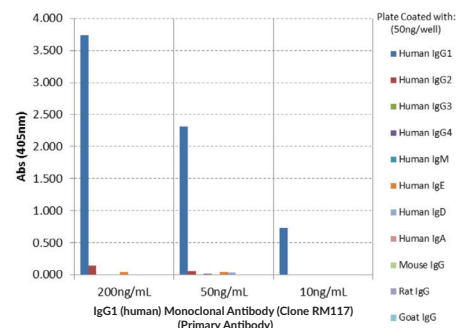
### Images



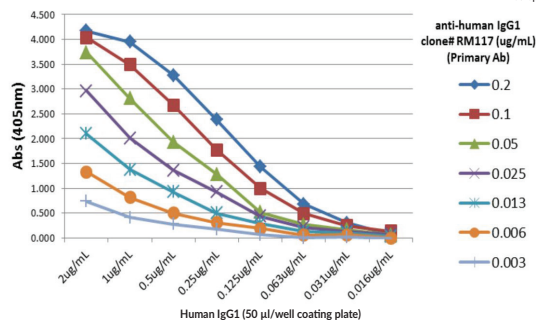
Detection of Human IgG1 in Monkey Serum. IgG1 (human) Monoclonal Antibody (Clone RM117) (capture) and Ig Light Chain (human) Monoclonal Antibody - Biotinylated (Item No. 32112) (detection) were used as a sandwich ELISA pair. HRP-conjugated streptavidin and TMB were used to yield the colorimetric reaction.



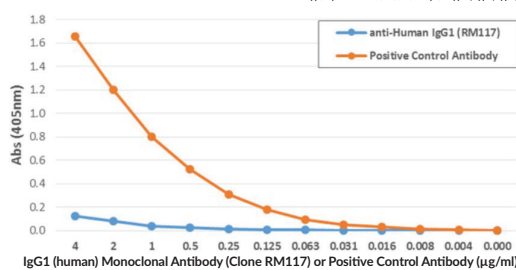
Sandwich ELISA Using IgG1 (human) Monoclonal Antibody (Clone RM117) as the Capture Antibody. Ig Light Chain (human) Monoclonal Antibody - Biotinylated (Item No. 32112) was used as the detection antibody, followed by alkaline phosphatase-conjugated streptavidin.



ELISA of Human Immunoglobulins (Igs). IgG1 (human) Monoclonal Antibody (Clone RM117) reacts to human IgG1 and not to any other IgG subclasses (IgG2, IgG3, or IgG4). No cross reactivity to IgM, IgA, IgD, IgE, mouse IgG, rat IgG, or goat IgG.



A Titer ELISA Using IgG1 (human) Monoclonal Antibody (Clone RM117). The plate was coated with different amounts of human IgG1. A serial dilution of IgG1 (human) Monoclonal Antibody (Clone RM117) was used as the primary antibody. An alkaline phosphatase-conjugated anti-rabbit IgG was used as the secondary antibody.



ELISA of Rhesus Monkey IgG. IgG1 (human) Monoclonal Antibody (Clone RM117) does not react to rhesus monkey IgG. The plate was coated with rhesus monkey IgG. A serial dilution of IgG1 (human) Monoclonal Antibody (Clone RM117) was used with a monkey IgG binding antibody (positive control) as the detection antibody.

**WARNING**  
 THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
 This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
 Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/13/2023

**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.<sup>1</sup> It is produced by B cells and later secreted by plasma cells and is the most abundant circulating antibody in human and mouse serum.<sup>1-3</sup> IgG consists of two heavy chains of approximately 50 kDa each and two light chains of approximately 25 kDa each.<sup>1</sup> 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.<sup>4</sup> 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.<sup>2</sup> IgG exists as four isotypes in humans, IgG1, IgG2, IgG3, and IgG4, each of which has a distinct effector function. IgG1 binds to Fc receptors to induce Fc receptor-mediated effector functions, as well as Cq1 to induce complement activation in response to soluble and membrane protein antigens. Maternal IgG1s are shared with the fetus *via* placental transfer and children with group B streptococcal-induced sepsis are born to mothers with decreased serum levels of IgG1 compared with mothers of uninfected children.<sup>5</sup> Cayman's IgG1 (human) Monoclonal Antibody (Clone RM117) can be used for ELISA, immunocytochemistry (ICC), and immunohistochemistry (IHC) applications.

## References

---

1. Schroeder, H.W., Jr. and Cavicini, L. Structure and function of immunoglobulins. *J. Allergy Clin. Immunol.* **125**(2 Suppl. 2), S41-S52 (2010).
2. Vidarsson, G., Dekkers, G., and Rispens, T. IgG subclasses and allotypes: From structure to effector functions. *Front. Immunol.* **5**, 520 (2014).
3. 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).
4. Vaillant A.A.J. and Ramphul K. Immunoglobulin. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing (2020). Available from: <https://www.ncbi.nlm.nih.gov/books/NBK513460/>
5. Jefferis, R. and Kumararatne, D.S. Selective IgG subclass deficiency: Quantification and clinical relevance. *Clin. Exp. Immunol.* **81**(3), 357-367 (1990).

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