

# PRODUCT INFORMATION



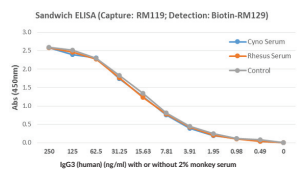
## IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119)

Item No. 32122

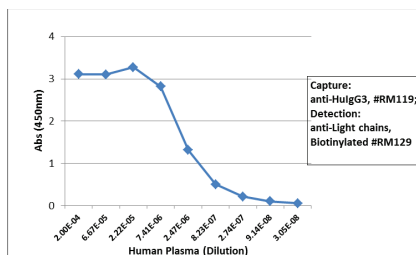
### Overview and Properties

<b>Contents:</b>	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
<b>Synonym:</b>	Immunoglobulin G3
<b>Immunogen:</b>	Human IgG3
<b>Cross Reactivity:</b>	(+) Human IgG3 heavy chain; (-) Human IgG1, IgG2, IgG4, IgM, IgA, IgD, IgE; (-) Cynomolgus monkey, goat, mouse, rat, or rhesus monkey IgG
<b>Species Reactivity:</b>	(+) Human
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Storage Buffer:</b>	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
<b>Concentration:</b>	1.0 mg/ml
<b>Clone:</b>	RM119
<b>Host:</b>	Rabbit
<b>Isotype:</b>	IgG
<b>Applications:</b>	ELISA, immunocytochemistry (ICC), immunohistochemistry (IHC); the recommended concentration is 200 ng/well (for capture) and 0.05–0.2 µg/ml (for detection) for ELISA and 0.5–2 µg/ml for ICC and IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

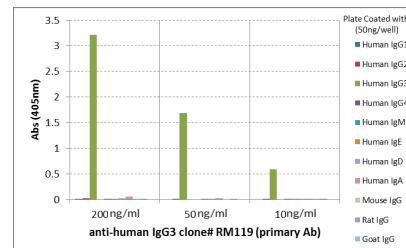
### Images



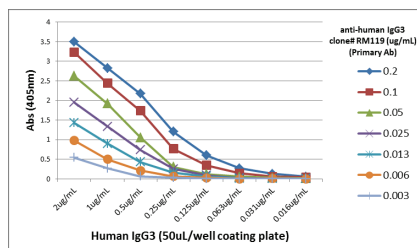
Detection of human IgG3 in monkey serum. Sandwich ELISA using IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119) as the capture antibody, and IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119) as the detection antibody, followed by an HRP-conjugated streptavidin.



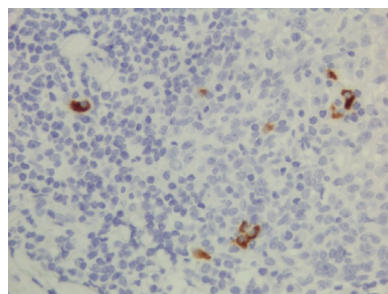
Sandwich ELISA using IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119) as the capture antibody (100 ng/well), and IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119) as the detection antibody, followed by an HRP-conjugated streptavidin.



ELISA showing IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119) reacts only to human IgG3, and not to any other IgG subclasses (IgG1, IgG2, or IgG4), and no cross reactivity to IgM, IgA, IgD, IgE, mouse IgG, rat IgG, or goat IgG.

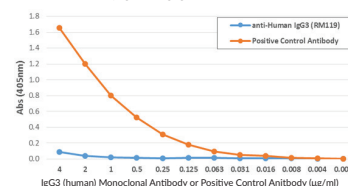


A titer ELISA using IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119). The plate was coated with different amounts of human IgG3. A serial dilution of IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119) was used as the primary antibody, followed by an alkaline phosphatase-conjugated anti-rabbit IgG as the secondary antibody.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human lymphoid tissue section using IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119).

### ELISA of Rhesus Monkey IgG Using IgG3 (human) Rabbit Monoclonal Antibody



ELISA showing IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119) does not react to monkey IgG. The plate was coated with rhesus monkey IgG. A serial dilution of IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119) and a monkey IgG-binding antibody (positive control) was used 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**  
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## Description

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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. IgG3 production is driven by bacterial- or viral-associated antigens, including HIV-1 and *Staphylococcus* antigens, and occurs early in the immune response following IgM class-switching.<sup>2,5</sup> IgG3 binds to and neutralizes pathogens, as well as activates complement and opsonizes bacteria, leading to complement-dependent cytotoxicity (CDC) and ADCC, respectively. Serum IgG3 levels are increased in patients with primary biliary cirrhosis, Sjögren's syndrome, systemic sclerosis, or systemic lupus erythematosus (SLE).<sup>6</sup> Cayman's IgG3 (human) Rabbit Monoclonal Antibody (Clone RM119) can be used for ELISA, immunocytochemistry (ICC), and immunohistochemistry (IHC) applications.

## References

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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).
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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. Damelang, T., Rogerson, S.J., Kent, S.J., *et al.* Role of IgG3 in infectious diseases. *Trends Immunol.* **40(3)**, 197-211 (2019).
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