PRODUCT INFORMATION

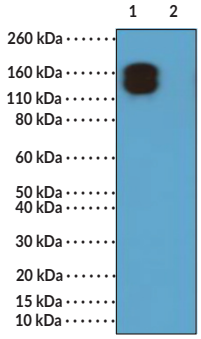
IgG2aκ (mouse) Rabbit Monoclonal Antibody (Clone RM107)

Item No. 32004

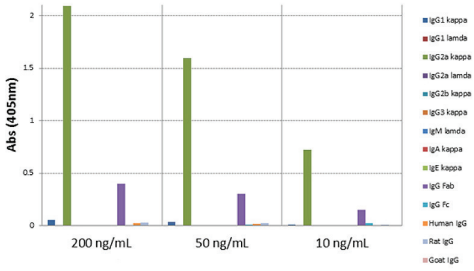
Overview and Properties

Contents: This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym: Immunoglobulin G2aκ
Immunogen: Mouse IgG
Cross Reactivity: (-) Mouse IgG2aλ, IgG1, IgG3, IgM, IgA, IgE; (-) Human, rat, goat IgG
Species Reactivity: (+) Mouse
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: RM107
Host: Rabbit
Isotype: IgG
Applications: ELISA and Western blot (WB); the recommended starting concentration is 0.1-0.5 µg/ml for ELISA and 0.005-0.2 µg/ml for WB. Immunoprecipitation, Flow Cytometry, and other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

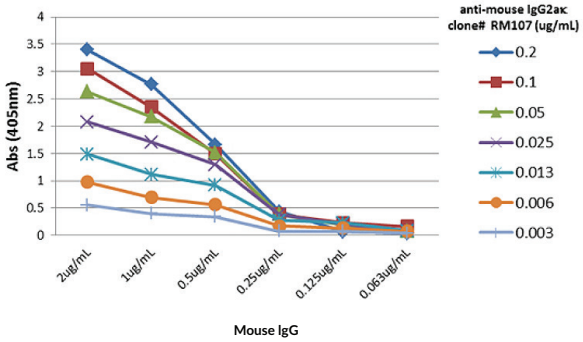


Lane 1: IgG2aκ (non-reduced)
Lane 2: IgG2ak (reduced)



IgG2aκ (mouse) Monoclonal Antibody

ELISA of Mouse Immunoglobulins (Igs). IgG2aκ (mouse) Rabbit Monoclonal Antibody (Clone RM107) reacts specifically to the Fab region of mouse IgG2aκ and not to IgG2aλ, IgG1, IgG3, IgM, IgA, IgE, human IgG, rat IgG, or goat IgG.



Mouse IgG

A Titer Sandwich ELISA Using IgG2aκ (mouse) Rabbit Monoclonal Antibody (Clone RM107). The plate was coated with different amounts of mouse IgG2aκ. A serial dilution of IgG2aκ (mouse) monoclonal antibody (Clone RM107)was used as the primary antibody. An alkaline phosphatase conjugated anti-rabbit IgG as the second antibody.

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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.[1-3] 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.[4] 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 mice: IgG1, IgG2b, IgG3, and, in a strain-specific manner, IgG2a or IgG2c.[5,6] *In vivo*, class switching to the IgG2a isotype can happen *via* IFN-γ-dependent and -independent mechanisms, with the former resulting from the cognate interaction of B cells with T helper 1 (Th1) cells.[7] IgG2a is the predominant isotype produced in response to infection with DNA or RNA viruses in mice.[8] Mammalian immunoglobulins contain either Igκ or Igλ light chains, each of which are composed of a constant and variable domain.[9] Cayman's IgG2aκ (mouse) Rabbit Monoclonal Antibody (Clone RM107) can be used for ELISA and Western blot (WB; non-reducing conditions) applications. The antibody recognizes the Fab region of IgG2aκ from mouse samples.

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. 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).
6. Martin, R.M., Brady, J.L., and Lew, A.M. The need for IgG2c specific antiserum when isotyping antibodies from C57BL/6 and NOD mice. *J. Immunol. Methods* **212(2)**, 187-192 (1998).
7. Jegerlehner, A., Maurer, P., Bessa, J.M., *et al*. TLR9 Signaling in B Cells Determines Class Switch Recombination to IgG2a. *J. Immunol.* **178(4)**, 2415-2420 (2007).
8. Coutlelier, J.P., Van Der Logt, J.T.M., Heessen, F.W.A., *et al*. IgG2a restriction of murine antibodies elicited by viral infections. *J. Exp. Med.* **165(1)**, 64-69 (1987).
9. Janeway, C.A., Jr., Travers, P., Walport, M., *et al*. Antigen recognition by B-cell and T-cell receptors. *Immunobiology*. Lawerence, E, 6th edition, *Garland Science Publishing* (2004).

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