

PRODUCT INFORMATION



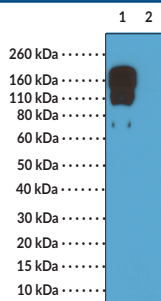
IgG2c (mouse) Rabbit Monoclonal Antibody (Clone RM223)

Item No. 32102

Overview and Properties

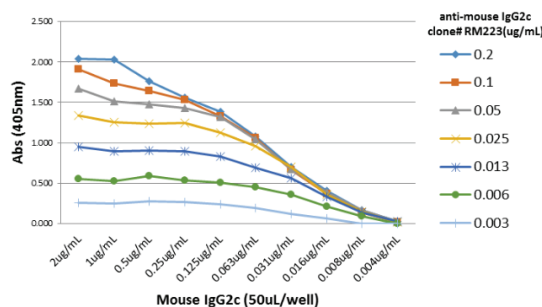
Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonyms:	Immunoglobulin G2c
Immunogen:	Mouse IgG2c
Cross Reactivity:	(-) Human, rat IgG; (-) Mouse IgG1, IgG2a, IgG2b, IgG3, IgA, IgE, IgM
Species Reactivity:	(+) Mouse
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Concentration:	1 mg/ml
Clone:	RM223
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA and Western blot (WB; non-reducing conditions); the recommended starting concentration for ELISA is 0.01-0.2 µg/ml and 0.5-2 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

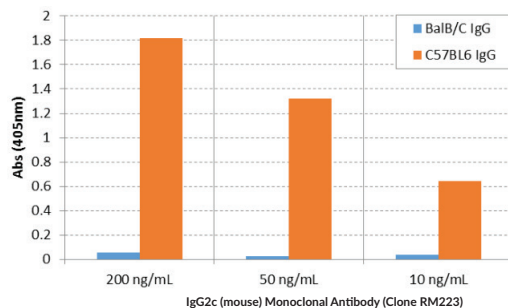


Lane 1: Mouse IgG2c (non-reduced)
Lane 2: Mouse IgG2c (reduced)

WB of non-reduced and reduced mouse IgG2c, using 0.5 µg/ml of IgG2c (mouse) Rabbit Monoclonal Antibody (Clone RM223). The antibody recognizes the Fc region of mouse IgG2c.



A Titer ELISA using IgG2c (mouse) Rabbit Monoclonal Antibody (Clone RM223). The plate was coated with different amounts of mouse IgG2c. A serial dilution of IgG2c (mouse) Rabbit Monoclonal Antibody (Clone RM223) was used as the primary antibody. An alkaline phosphatase conjugated anti-rabbit IgG was used as the secondary antibody.



ELISA of IgG from BALB/c and C57BL/6. IgG2c (mouse) Rabbit Monoclonal Antibody (Clone RM223) reacts to C57BL/6 IgG containing IgG2c, and does not react to BALB/c IgG containing IgG2a. 200 ng/ml, 50 ng/ml, or 10 ng/ml of IgG2c (mouse) Rabbit Monoclonal Antibody (Clone RM223) was used as the primary antibody. An alkaline phosphatase conjugated anti-rabbit IgG was used as the secondary 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

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} IgG2c is encoded by *Ighg2c* and is expressed in certain inbred mouse strains, such as C57BL/6, C57BL/10, SJL, and NOD mice.⁶ Class switching to the IgG2c isotype occurs via IFN- γ stimulation during the early immune response.⁷ IgG2c binds to the high affinity Ig γ Fc receptor I (Fc γ RI) on dendritic cells and the low affinity Fc γ RIII and Fc γ RIV, which are expressed on a variety of immune cells, and is involved in complement activation.^{8,9} Cayman's IgG2c (mouse) Rabbit Monoclonal Antibody (Clone RM223) can be used for ELISA and Western blot (WB; non-reducing conditions) applications. The antibody recognizes the Fc region of IgG2c 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. Barr, T.A., Brown, S., Mastroeni, P., et al. B cell intrinsic MyD88 signals drive IFN- γ production from T cells and control switching to IgG2c. *J. Immunol.* **183(2)**, 1005-1012 (2009).
8. Strait, R.T., Thornton, S., and Finkelman, F.D. C γ 1 deficiency exacerbates collagen-induced arthritis. *Arthritis Rheumatol.* **68(7)**, 1780-1787 (2016).
9. Bruhns, P. Properties of mouse and human IgG receptors and their contribution to disease models. *Blood* **119(24)**, 5640-5649 (2012).

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