PRODUCT INFORMATION

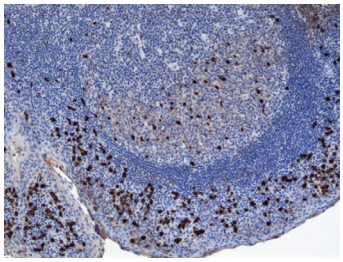
IgA1 (human) Rabbit Monoclonal Antibody

Item No. 32115

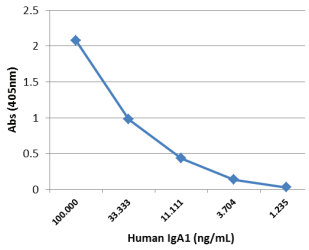
Overview and Properties

Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Immunoglobulin A1
Immunogen:	Human IgA
Cross Reactivity:	(+) Human IgA1, IgA2 (weakly); (-) Human IgD, IgE, IgG, IgM
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 mg/ml
Clone:	RM124
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, immunocytochemistry (ICC), and immunohistochemistry (IHC); the recommended starting concentration for ELISA capture is 50-200 ng/well and 0.05-0.2 µg/ml for ELISA detection, 0.5-2 µg/ml for ICC, and 0.1-1 µg/ml for IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

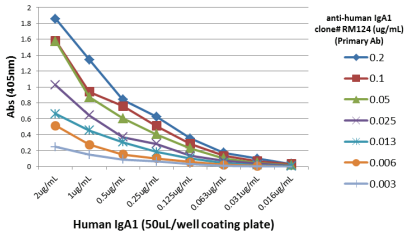
Images



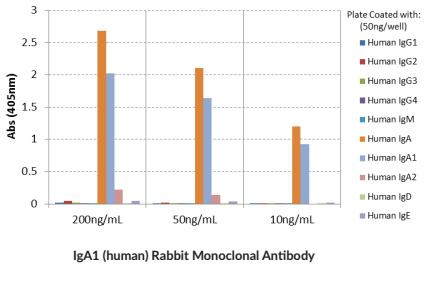
Immunohistochemistry of human tonsil tissue using IgA1 (human) Rabbit Monoclonal Antibody



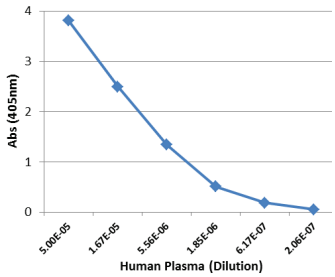
Sandwich ELISA of IgA1 (human) Rabbit Monoclonal Antibody. IgA1 (human) Rabbit Monoclonal Antibody was used as the capture antibody (100 ng/well) and Ig Light Chain (human) Rabbit Monoclonal Antibody - Biotinylated (Item No. 32112) was used as the detection antibody, followed by an alkaline phosphatase-conjugated streptavidin secondary antibody.



A Titer ELISA of IgA1 (human) Rabbit Monoclonal Antibody. The plate was coated with different amounts of human IgA1. A serial dilution of IgA1 (human) Rabbit Monoclonal Antibody was used as the primary antibody. An alkaline phosphatase-conjugated anti-rabbit IgG was used as the secondary antibody.



ELISA of Human Immunoglobulins (Igs). IgA1 (human) Rabbit Monoclonal Antibody reacts only to human IgA. It very slightly cross reacts with IgA2. No cross reactivity with human IgG, IgM, IgD, or IgE. The plate was coated with 50 ng/well of different Igs. 200, 50, or 10 ng/ml of IgA1 (human) Rabbit Monoclonal Antibody was used as the primary antibody. An alkaline phosphatase-conjugated anti-rabbit IgG was used as the secondary antibody.



Sandwich ELISA of IgA1 (human) Rabbit Monoclonal Antibody. IgA1 (human) Rabbit Monoclonal Antibody was used as the capture antibody (100 ng/well) and Ig Light Chain (human) Rabbit Monoclonal Antibody - Biotinylated (Item No. 32112) was used as the detection antibody, followed by an alkaline phosphatase-conjugated streptavidin secondary antibody.

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PRODUCT INFORMATION

Description

Immunoglobulin A (IgA) is a member of the immunoglobulin superfamily of glycoproteins with roles in host defense against intestinal pathogens and both quantitative and qualitative control of host commensal microbiota composition.[1,2] Human IgA consists of two identical light chains of approximately 25 kDa each, as well as two heavy chains of approximately 60 kDa each that contain C-terminal extensions, known as tailpieces, which allow for IgA oligomerization.[3,4] There are two IgA subclasses, IgA1 and IgA2, which are encoded by *IGHA1/α1* and *IGHA2/α2*, respectively, and have differences primarily in the hinge and heavy chain constant regions.[4] IgA is produced by B cells and later secreted by plasma cells and is the most abundant antibody on mucosal surfaces that comprises at least 70% of all Ig produced in mice.[1,2] Monomeric IgA1 is predominant in the serum, but dimeric secretory IgA (SIgA) is the predominant form in mucosal surfaces and secretions with the ratio of subclasses varying based on the IgA-secreting cell types present.[4,5] Dimeric and polymeric IgA bind to Igα Fc receptor I (FcαRI) and the IgM- and IgA-binding high affinity Igα and Igμ Fc receptor (Fcα/μ-R), which are both involved in mediating immune responses.[5,6] Production of IgA is induced in the gut only in animals containing intestinal microbes, and the number of IgA-producing plasma cells is reduced in germ-free mice.[1] The extended hinge region of IgA1 contains O-linked glycan side chains, which have altered galactosylation and form circulating immune complexes in patients with IgA neuropathy (IgAN), an autoimmune inflammatory disease characterized by IgA1-containing deposits in the glomerular mesangium, tea-colored urine, proteinuria, and, potentially, renal failure.[7,8] IgA levels are increased in certain gastrointestinal tract and liver diseases, with IgA1 levels increased to a higher degree than IgA2 levels in patients with chronic hepatitis.[7] Cayman's IgA1 (human) Rabbit Monoclonal Antibody can be used for ELISA, immunocytochemistry (ICC), and immunohistochemistry (IHC) applications.

References

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2. Mathias, A., Pais, B., Favre, L., *et al.* Role of secretory IgA in the mucosal sensing of commensal bacteria. *Gut Microbes* **5(6)**, 688-695 (2014).
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4. Woof, J.M. The structure of IgA. *Mucosal Immune Defense: Immunoglobulin A*. Kaetzel, C.S., editor, *Springer US* (2007).
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8. Donadio, J.V. and Grande, J.P. IgA nephropathy. *N. Engl. J. Med.* **347(10)**, 738-748 (2002).

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