PRODUCT INFORMATION

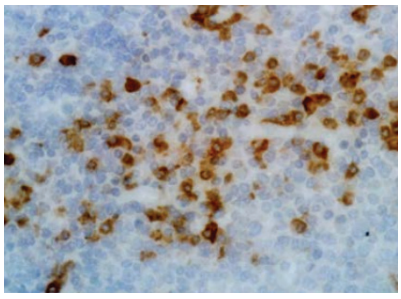
Igκ Light Chain (human) Rabbit Monoclonal Antibody (Clone RM126)

Item No. 32108

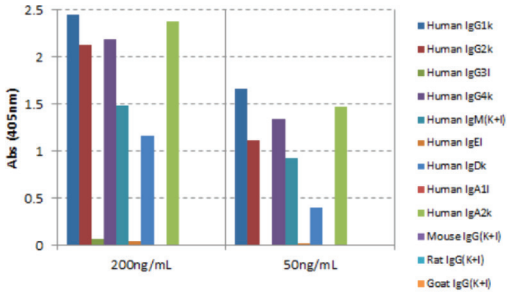
Overview and Properties

Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Immunoglobulin κ Light Chain
Immunogen:	Human IgG
Cross Reactivity:	(+) Igκ light chain; (-) Human λ light chain, 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 mg/ml
Clone:	RM126
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, flow cytometry (FC), immunocytochemistry (ICC), and immunohistochemistry (IHC); the recommended starting concentration for ELISA is 0.05-0.2 µg/ml and 0.5-2 µg/ml for FC, ICC, and IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

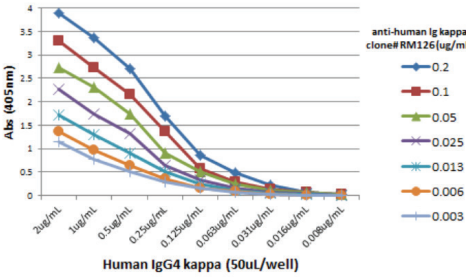


Immunohistochemical staining of formalin-fixed and paraffin-embedded human tonsil tissue section using Igκ Light Chain (human) Rabbit Monoclonal Antibody (Clone RM126).



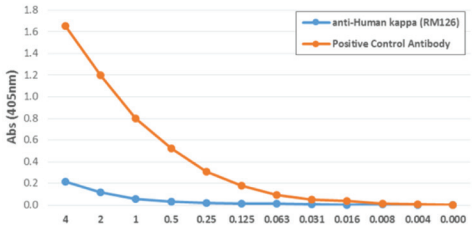
Igκ Light Chain (human) Rabbit Monoclonal Antibody

ELISA of Human Immunoglobulins (Igs). Igκ Light Chain (human) Rabbit Monoclonal Antibody (Clone RM126) reacts only to the κ light chain of human Igs and not to λ light chain, mouse IgG, rat IgG, or goat IgG.



Human IgG4 kappa (50uL/well)

A Titer ELISA using Igκ Light Chain (human) Rabbit Monoclonal Antibody (Clone RM126). The plate was coated with different amounts of human IgG4κ. A serial dilution of Igκ Light Chain (human) Rabbit Monoclonal Antibody (Clone RM126) was used as the primary antibody, followed by an alkaline phosphatase conjugated anti-rabbit IgG as the secondary antibody.



Igκ Light Chain (human) Rabbit Monoclonal Antibody (Clone RM126) or Positive Control Antibody (µg/ml)

ELISA of Rhesus Monkey IgG. Igκ Light Chain (human) Rabbit Monoclonal Antibody (Clone RM126) does not react to monkey IgG. The plate was coated with rhesus monkey IgG. A serial dilution of Igκ Light Chain (human) Rabbit Monoclonal Antibody (Clone RM126) and a monkey IgG binding antibody (positive control) was used as the detection antibody.

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

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Description

Igκ light chain is one type of light chain found in immunoglobulins, which are part of the immunoglobulin superfamily of glycoproteins that plays a central role in the adaptive immune response.[1] Immunoglobulins are produced by B cells and later secreted by plasma cells as antibodies.[2] They are composed 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.[3] Mammalian immunoglobulins contain either Igκ or Igλ light chains, each of which are composed of a constant and variable domain.[4] The ratio of Igκ to Igλ light chain-containing antibodies varies between species, with ratios of 20:1, 2:1, and 1:20 in mice, humans, and cattle, respectively. Igκ and Igλ free light chains (FLCs) are produced during immunoglobulin synthesis, and accumulation of these FLCs, primarily Igκ, is associated with various disorders, including light-chain deposition disease, multiple myeloma, rheumatoid arthritis, diabetic nephropathy, and systemic lupus erythematosus (SLE).[2,5,6] Cayman's Igκ Light Chain (human) Rabbit Monoclonal Antibody (Clone RM126) can be used for ELISA, flow cytometry (FC), immunocytochemistry (ICC), and immunohistochemistry (IHC) applications. The antibody recognizes the κ light chain from human 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. Esparvarinha, M., Nickho, H., Mohammadi, H., *et al.* The role of free kappa and lambda light chains in the pathogenesis and treatment of inflammatory diseases. *Biomed. Pharmacother.* **91**, 632-644 (2017).
3. 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/
4. Janeway, C.A., Jr., Travers, P., Walport, M., *et al.* Antigen recognition by B-cell and T-cell receptors. *Immunobiology.* 6th edition, *Garland Science Publishing* (2004).
5. Jimenez-Zepeda, V.H. Light chain deposition disease: Novel biological insights and treatment advances. *Int. J. Lab. Hematol.* **34(4)**, 347-355 (2012).
6. Sannier, A., Hanouna, G., Daugas, E., *et al.* IgA kappa light and heavy chain deposition disease in multiple myeloma. *Br. J. Haematol.* **183(1)**, 13 (2018).

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1180 EAST ELLSWORTH RD
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WWW.CAYMANCHEM.COM