PRODUCT INFORMATION

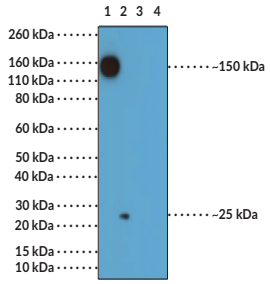
Igκ Light Chain (mouse) Monoclonal Antibody (Clone RM103)

Item No. 32001

Overview and Properties

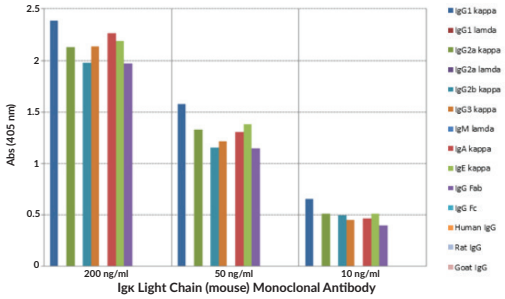
Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Immunoglobulin κ Light Chain
Immunogen:	Mouse IgG
Cross Reactivity:	(-) λ Light Chain; (-) Human, rat, goat IgG
Species Reactivity:	(+) Mouse
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Concentration:	1.0 mg/ml
Clone:	RM103
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA and Western blot (WB); the recommended starting concentration is 0.005-2 µg/ml for ELISA and 0.1-0.5 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

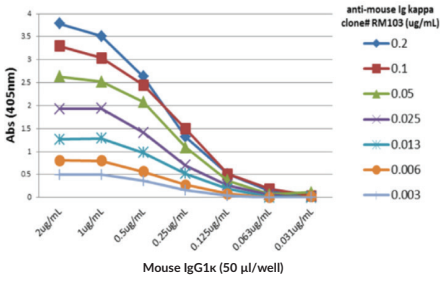


Lane 1: Non-reduced mouse IgG1κ (20 ng)
Lane 2: Reduced mouse IgG1κ (20 ng)
Lane 3: Non-reduced mouse IgG1λ (20 ng)
Lane 4: Reduced mouse IgG1λ (20 ng)

WB of non-reduced and reduced mouse IgG1κ and IgG1λ (20 ng/lane) using 0.2 µg/ml of Igκ Light Chain (mouse) Monoclonal Antibody. This antibody reacts to non-reduced IgG1κ (~150 kDa) and slightly reacts to reduced IgG1κ (~25 kDa).



ELISA of Mouse Immunoglobulins (Igs). Igκ Light Chain (mouse) Monoclonal Antibody reacts to the κ light chain of mouse Igs. No cross reactivity with the λ light chain, human IgG (κ+λ), rat IgG (κ+λ), or goat IgG (κ+λ). The plate was coated with 50 ng/well of different Igs. 200 ng/ml, 50 ng/ml, or 10 ng/ml of Igκ Light Chain (mouse) Monoclonal Antibody was used as the primary antibody. An alkaline phosphatase conjugated anti-rabbit IgG was used as the secondary antibody.



A Titer ELISA of Mouse IgG1κ. The plate was coated with different amounts of mouse IgG1κ. A serial dilution of Igκ Light Chain (mouse) Monoclonal Antibody was used as the primary antibody. An alkaline phosphatase conjugated anti-rabbit IgG was used as the secondary 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

PRODUCT INFORMATION

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 (mouse) Monoclonal Antibody (Clone RM103) can be used for flow cytometry (FC), immunoprecipitation (IP), ELISA, and Western blot (WB) applications. The antibody recognizes non-reduced and reduced Igκ light chain from mouse samples at approximately 159 and 25 kDa, respectively.

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).

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