

**AM32823PU-T****Monoclonal Antibody to Human Lambda Light Chain - Purified**

<b>Quantity:</b>	20 µg
<b>Concentration:</b>	0.2 mg/ml
<b>Background:</b>	<p>An antibody is a Y-shaped glycoprotein belonging to the immunoglobulin superfamily. Antibodies are produced by B lymphocytes, and utilized by the immune system to identify and neutralize bacteria, viruses and other foreign targets. Two large heavy and two small light chains connected by disulfide bonds comprise the basic structural antibody unit, and form the antibody Y shape. There are two types of immunoglobulin light chains in mammals, lambda and kappa. Each B lymphocyte expresses only one class, either lambda or kappa. Once determined, the class remains fixed for the life of the B lymphocyte. The total kappa to lambda ratio is approximately 2:1 in serum from a healthy individual, measuring intact whole antibodies and 1:1.5 if measuring free light chains. A highly divergent kappa to lambda ratio can be indicative of a malignancy or inflammatory condition.</p>
<b>Host / Isotype:</b>	Mouse / IgG2a
<b>Recommended Isotype Controls:</b>	AM03096PU-N
<b>Clone:</b>	LcN-2
<b>Immunogen:</b>	Purified Human IgG
<b>Format:</b>	<b>State:</b> Liquid purified IgG fraction from Bioreactor Concentrate <b>Purification:</b> Affinity Chromatography on Protein A/G <b>Buffer System:</b> 10mM PBS <b>Preservatives:</b> 0.05% Sodium Azide <b>Stabilizers:</b> 0.05% BSA
<b>Applications:</b>	<b>ELISA</b> (Use Antibody without BSA for coating). <b>Western Blot:</b> 0.5-5 µg/ml. <b>Immunoprecipitation:</b> 1-2 µg/500 µg protein lysate. <b>Immunofluorescence:</b> 1-2 µg/ml. <b>Flow Cytometry:</b> 0.5-1 µg/10 <sup>6</sup> cells. <b>Immunohistochemistry on Frozen and Fixed-Formalin Paraffin Sections:</b> 0.5-1 µg/ml for 30 minutes at RT. Staining of formalin-fixed tissues requires boiling tissue sections in 10mM Citrate Buffer, pH 6.0, for 10-20 min followed by cooling at RT for 20 minutes. <b>Positive Control:</b> 293T, Raji or hPBL cells, Tonsil or Spleen. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
<b>Molecular Weight:</b>	~22.5 kDa
<b>Specificity:</b>	This Monoclonal LcN-2 antibody is specific to lambda light chain of immunoglobulin and shows no cross-reaction with lambda light chain or any of the five heavy chains. In mammals, the two light chains in an antibody are always identical, with only one

type of light chain, kappa or lambda. The ratio of Kappa to Lambda is 70:30. However, with the occurrence of multiple myeloma or other B-cell malignancies this ratio is disturbed.

Antibody to the lambda light chain is reportedly useful in the identification of leukemias, plasmacytomas, and certain non-Hodgkin's lymphomas. Demonstration of clonality in lymphoid infiltrates indicates that the infiltrate is malignant.

**Species Reactivity:**

**Tested:** Human.

**Storage:**

Store undiluted at 2-8°C.

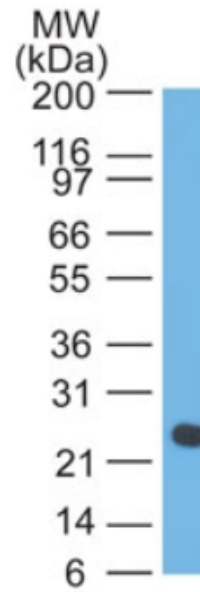
Shelf life: one year from despatch.

**General Readings:**

1. Development of a highly-sensitive multi-plex assay using monoclonal antibodies for the simultaneous measurement of kappa and lambda immunoglobulin free lightchains in serum and urine. Campbell JP, Cobbold M, Wang Y, Goodall M, Bonney SL, Chamba A, Birtwistle J, Plant T, Afzal Z, Jefferis R, Drayson MT. *J Immunol Methods*. 2013 May 31;391(1-2):1-13. doi: 10.1016/j.jim.2013.01.014. Epub 2013 Feb 4.
2. Defining the impact of individual sample variability on routine immunoassay of serum free lightchains (sFLC) in multiple myeloma. Murg SH, Follows L, Whitfield P, Snowden JA, Swallow K, Green K, Sargur R, Egner W. *Clin Exp Immunol*. 2013 Feb;171(2):201-9. doi: 10.1111/cei.12011.
3. Normalization of free lightchain kappa/lambda ratio is a robust prognostic indicator of favorable outcome in patients with multiple myeloma. Iwama K, Chihara D, Tsuda K, Ugai T, Sugihara H, Nishida Y, Yamakura M, Takeuchi M, Matsue K. *Eur J Haematol*. 2013 Feb;90(2):134-41. doi: 10.1111/ejh.12050. Epub 2013 Jan 7.
4. de Vos M, Druetz P, Nicaise M, Ngendahayo P, Sinapi I, Mineur P. Multiple myeloma presenting as hepatic nodular lesion. *Acta Clin Belg*. 2012 Sep-Oct;67(5):378-80. PubMed PMID: 23189550.
5. Riveiro-Barciela M, Martínez-Valle F, Vilardell-Tarrés M. Nephrotic syndrome and lambda light-chain monoclonal gammopathy suggestive of primary amyloidosis with positive staining for AA amyloid. *J Am Geriatr Soc*. 2012 Oct;60(10):1974-5. doi: 10.1111/j.1532-5415.2012.04160.x. PubMed PMID: 23057449.
6. Redegeld FA, Thio M, Groot Kormelink T. Polyclonal immunoglobulin free light chain and chronic inflammation. *Mayo Clin Proc*. 2012 Oct;87(10):1032-3; author reply 1033. doi: 10.1016/j.mayocp.2012.07.012. PubMed PMID: 23036675.
7. Inability of a monoclonal antilight chain antibody to detect clonal plasma cells in a patient with multiple myeloma by multicolor flow cytometry. van Velzen JF, van den Blink D, Bloem AC. *Cytometry B Clin Cytom*. 2013 Jan-Feb;84(1):30-2. doi: 10.1002/cyto.b.21044. Epub 2012 Sep 27.
8. Unsworth DJ, Wallage MJ, Sarkar E, Lock RJ. Abnormalities of serum-free light chain in patients with primary antibody deficiency in the absence of B lymphocyte clonality. *J Clin Pathol*. 2012 Dec;65(12):1128-31. doi: 10.1136/jclinpath-2012-201044. Epub 2012 Sep 21. PubMed PMID: 23002283.
9. Campbell JP et. al. *J Immunol Methods*. 2013;391(1-2):1-13.

**Pictures:**

Western blot analysis of Lambda in Human intestine using Lambda Antibody Cat.-No AM32823PU (Clone LcN-2).



Formalin-Fixed, Paraffin-Embedded Human tonsil stained with Lambda Antibody Cat.-No AM32823PU (Clone LcN-2). Note cell membrane and cytoplasmic staining.

