

Datasheet: MCA2260

Description:	RAT ANTI RITUXIMAB
Specificity:	RITUXIMAB
Other names:	MabThera , Rituxan
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	MB2A4
Isotype:	IgG2a
Quantity:	0.2 mg

Product Details

RRID AB_323787

Applications This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			50 ug/ml
Immunohistology - Frozen			▪	
Immunohistology - Paraffin			▪	
ELISA	▪			

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

Product Form Purified IgG - liquid

Preparation Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant

Buffer Solution TRIS buffered saline

Preservative Stabilisers 0.09% Sodium Azide (NaN₃)

Approx. Protein Concentrations IgG concentration 1.0 mg/ml

Immunogen F(ab)₂ fragment of Rituximab

Fusion Partners Spleen cells from immunised rats were fused with cells of the NS-1 mouse myeloma cell line

Specificity **Rat Anti-Rituximab Antibody, clone MB2A4**, is an anti-idiotypic antibody that specifically recognizes the monoclonal antibody drug rituximab. The antibody can be used to measure the

levels of rituximab and biosimilar products in bioanalytical assays. Rat Anti-Rituximab Antibody, clone MB2A4, is specific for rituximab and does not recognize other CD20 antibodies. Clone MB2A4 has been used in ELISA to monitor the levels of rituximab in patient serum following therapy ([Cragg et al. 2004](#) and [Hampson et al. 2010](#)).

Clone MB2A4 has been used to detect rituximab bound to the surface of the Raji B cell line, however detection of rituximab bound in vivo to B-CLL cells has not been demonstrated. It is possible that complement deposition on rituximab opsonised cells inhibits binding of the Anti-Rituximab Antibody to cell bound rituximab ([Beum et al. 2004](#)). Inhibition experiments carried out with Daudi cells demonstrated that this antibody is inhibitory at a ratio of 5:1 antibody:rituximab, but does not inhibit rituximab binding to CD20 at a ratio of 1:1.

Rituximab (reference product branded as Rituxan) is a chimeric mouse/human monoclonal antibody approved for the treatment of certain autoimmune diseases and cancer, including non-Hodgkin's lymphoma, chronic lymphocytic leukemia and rheumatoid arthritis. The antibody is specific for the cell surface protein CD20, which is widely expressed on B cells. Through three different mechanisms of action it eliminates B cells from the body, enabling the development of a new population of healthy B cells.

[View a summary of all Anti-Rituximab Antibodies.](#)

Flow Cytometry	Use 10ul of the suggested working dilution to label 10 ⁶ cells in 100ul.
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ELISA	This product may be used in a direct ELISA or as a detection reagent, when conjugated to HRP, in a sandwich ELISA together with HCA186 as the capture reagent. Protocol: PK bridging ELISA to measure free drug
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References	<ol style="list-style-type: none">1. Cragg, M. S. <i>et al.</i> (2004) A new anti-idiotypic antibody capable of binding rituximab on the surface of lymphoma cells. Blood. 104:2540-22. Cragg, M.S. <i>et al.</i> (2004) Apparent modulation of CD20 by rituximab: an alternative explanation. Blood. 103 (10): 3989-90; author reply 3990-1.3. Beum, P.V. <i>et al.</i> (2004) Complement activation and C3b deposition on rituximab-opsonized cells substantially blocks binding of phycoerythrin-labeled anti-mouse IgG probes to rituximab. J Immunol Methods. 294 (1-2): 37-42.4. Hampson, G. <i>et al.</i> (2010) Validation of an ELISA for the determination of rituximab pharmacokinetics in clinical trials subjects. J Immunol Methods. 360 (1-2): 30-8.5. Blasco, H. <i>et al.</i> (2007) Evaluation of a peptide ELISA for the detection of rituximab in serum. J Immunol Methods. 325: 127-39.6. Daydé, D. <i>et al.</i> (2009) Tumor burden influences exposure and response to rituximab: pharmacokinetic-pharmacodynamic modeling using a syngeneic bioluminescent murine model expressing human CD20. Blood. 113: 3765-72.7. Aung, T. <i>et al.</i> (2011) Exosomal evasion of humoral immunotherapy in aggressive B-cell lymphoma modulated by ATP-binding cassette transporter A3. Proc Natl Acad Sci U S A. 108: 15336-41.8. Schmidt, E. <i>et al.</i> (2009) Immunogenicity of rituximab in patients with severe pemphigus. Clin Immunol. 132: 334-41.9. McDonald, V. <i>et al.</i> (2010) Rituximab pharmacokinetics during the management of acute idiopathic thrombotic thrombocytopenic purpura. J Thromb Haemost. 8: 1201-8.10. Kagan, L. <i>et al.</i> (2012) Subcutaneous Absorption of Monoclonal Antibodies: Role of Dose, Site of Injection, and Injection Volume on Rituximab Pharmacokinetics in Rats. Pharm Res. 29: 490-49911. Kagan, L. and Mager, D.E. (2013) Mechanisms of subcutaneous absorption of rituximab in rats. Drug Metab Dispos. 41: 248-55.12. Liu, X.F. <i>et al.</i> (2012) Validation of a Gyrolab™ assay for quantification of rituximab in human
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19. Lioger, B. *et al.* (2017) Antigenic burden and serum IgG concentrations influence rituximab pharmacokinetics in rheumatoid arthritis patients. [Br J Clin Pharmacol. Feb 23. \[Epub ahead of print\]](#)
20. Kashiwagi, N. *et al.* (2017) Method for measuring anti-drug antibody [US Patent Application US20170315118A1](#)

Storage	Store at +4°C or at -20°C if preferred. This product should be stored undiluted. Storage in frost-free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.
Guarantee	18 months from date of despatch
Acknowledgements	Rituxan is a registered trademark of Biogen Idec/Genentech in the USA. MabThera is a registered trademark of Roche in Europe.
Health And Safety Information	Material Safety Datasheet documentation #10057 available at: 10057: https://www.bio-rad-antibodies.com/uploads/MSDS/10057.pdf
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Rabbit Anti Rat IgG (STAR17...) [FITC](#)

Rabbit Anti Rat IgG (STAR20...) [RPE](#)

Goat Anti Rat IgG (STAR69...) [FITC](#)

Goat Anti Rat IgG (STAR73...) [RPE](#)

Recommended Useful Reagents

[HUMAN ANTI RITUXIMAB \(HCA061\)](#)

[HUMAN ANTI RITUXIMAB:HRP \(HCA061P\)](#)

[HUMAN ANTI RITUXIMAB \(HCA062\)](#)

[HUMAN ANTI RITUXIMAB:HRP \(HCA062P\)](#)

HUMAN ANTI RITUXIMAB (HCA186)

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'M335262:181204'

Printed on 11 Oct 2019

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