

## Datasheet: MCA792F

<b>Description:</b>	MOUSE ANTI HUMAN B CELLS:FITC
<b>Specificity:</b>	B CELLS (FMC7 ANTIGEN)
<b>Other names:</b>	CD20
<b>Format:</b>	FITC
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	FMC7
<b>Isotype:</b>	IgM
<b>Quantity:</b>	100 TESTS/1ml

## Product Details

### 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](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	■			Neat

Where this antibody 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 antibody for use in their own system using appropriate negative/positive controls.

Target Species	Human		
Product Form	Purified IgM conjugated to Fluorescein Isothiocyanate Isomer 1 (FITC) - liquid		
Max Ex/Em	Fluorophore	Excitation Max (nm)	Emission Max (nm)
	FITC	490	525
Preparation	Purified IgM prepared by gel filtration		
Buffer Solution	TRIS buffered glycine		
Preservative	0.1% Sodium Azide (NaN <sub>3</sub> )		
Stabilisers	0.2% Bovine Serum Albumin		
Immunogen	HRIK cells - Human B-Lymphoblastoid line.		
External Database Links	<b>UniProt:</b> <a href="#">P11836</a> <a href="#">Related reagents</a>  <b>Entrez Gene:</b> <a href="#">931</a> MS4A1 <a href="#">Related reagents</a>		

## Synonyms

CD20

## Specificity

**Mouse anti Human B cells antibody, clone FMC7** recognizes a glycoprotein antigen of ~105 kDa expressed by B lymphocytes. The FMC7 antigen is expressed by peripheral B lymphocytes, and has been used widely in the study of B cell malignancy. Mouse anti Human B cells antibody, clone FMC7 has been used extensively to differentiate various types of B cell malignancy. B-CLL is generally considered to be negative for FMC7 expression, but strong staining is seen in many other types of B cell lymphoma, including prolymphocytic leukaemia and hairy cell leukaemia.

The nature of the FMC7 antigen has remained poorly defined following its first description in 1981. The expression pattern closely corresponds to that seen with CD22, but studies have shown that FMC7 does not recognise the CD22 molecule itself. Mouse anti Human B cells antibody, clone FMC7 recognizes a conformational epitope on the CD20 molecule, most likely a multimeric complex of CD20 ([Serke \*et al.\* 2001](#)). Identity of CD20 as the antigen recognized by Mouse anti Human B cells antibody, clone FMC7 was further confirmed by strong recognition of [recombinant CD20](#) expressed in hematopoietic and non-hematopoietic cell lines and abolishment of binding in [CD20 extracellular domain mutations](#). The recognized epitope has also been shown to be [cholesterol dependent](#) ([Polyak \*et al.\* 2003](#)).

## Flow Cytometry

Use 10ul of the suggested working dilution to label 10<sup>6</sup> cells or 100ul whole blood.

## References

1. Catovsky, D. *et al.* (1981) Heterogeneity of B-cell leukemias demonstrated by the monoclonal antibody FMC7. [Blood. 58 \(2\): 406-8.](#)
2. Serke, S. *et al.* (2001) Monoclonal antibody FMC7 detects a conformational epitope on the CD20 molecule: Evidence from phenotyping after Rituxan therapy and transfectant cell analyses. [Cytometry \(Comm. Clin. Cytometry\) 46:98-104](#)
3. Zola H., *et al.* (1984) The human B cell lineage studied with monoclonal antibodies. In Leucocyte Typing Ed.A. Bernard, Springer Verlag. p363-71.
4. Zola, H. *et al.* (1984) The antigen of mature human B cells detected by the monoclonal antibody FMC7: studies on the nature of the antigen and modulation of its expression. [J Immunol. 133 \(1\): 321-6.](#)
5. Bloem, A.C. *et al.* (1988) Functional properties of human B cell subpopulations defined by monoclonal antibodies HB4 and FMC7. [J Immunol. 140 \(3\): 768-73.](#)
6. Zola, H. *et al.* (1987) Markers of differentiated B cell leukaemia: CD22 antibodies and FMC7 react with different molecules. [Dis Markers. 5 \(4\): 227-35.](#)
7. Ghia, P. *et al.* (2003) The pattern of CD38 expression defines a distinct subset of chronic lymphocytic leukemia (CLL) patients at risk of disease progression. [Blood. 101 \(4\): 1262-9.](#)
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9. Collins R.J., *et al.* (1992) Malignant lymphoma: reactive with the monoclonal antibody FMC7. *Pathology* 15: 350.
10. Zucchetto A *et al.* (2006) A scoring system based on the expression of six surface molecules allows the identification of three prognostic risk groups in B-cell chronic lymphocytic leukemia. [J Cell Physiol. 207 \(2\): 354-63.](#)
11. Wang, C. *et al.* (2002) Differentiation of monoclonal B lymphocytosis of undetermined significance (MLUS) and chronic lymphocytic leukemia (CLL) with weak CD5 expression from CD5(-) CLL. [Leuk Res. 26 \(12\): 1125-9.](#)
12. Amato, D. *et al.* (2007) Cytogenetic aberrations and immunoglobulin VH gene mutations in clinically benign CD5- monoclonal B-cell lymphocytosis. [Am J Clin Pathol. 128 \(2\): 333-8.](#)
13. Polyak, M.J. *et al.* (2003) A cholesterol-dependent CD20 epitope detected by the FMC7 antibody. [Leukemia. 17 \(7\): 1384-9.](#)
14. Domingo-Domènech, E. *et al.* (2002) CD38 expression in B-chronic lymphocytic leukemia:

association with clinical presentation and outcome in 155 patients. [Haematologica. 87 \(10\): 1021-7.](#)

15. Gladkikh, A. *et al.* (2010) Cyclin D1 expression in B-cell lymphomas. [Exp Hematol. 38 \(11\): 1047-57.](#)

16. Unruh, T.L. *et al.* (2005) Cholesterol depletion inhibits src family kinase-dependent calcium mobilization and apoptosis induced by rituximab crosslinking. [Immunology. 116 \(2\): 223-32.](#)

17. Gladkikh, A.A. *et al.* (2017) Comparison of the mRNA expression profile of B-cell receptor components in normal CD5-high B-lymphocytes and chronic lymphocytic leukemia: a key role of ZAP70. [Cancer Med. 6 \(12\): 2984-97.](#)

<b>Storage</b>	<p>Store at +4°C or at -20°C if preferred.</p> <p>Storage in frost-free freezers is not recommended.</p> <p>This product should be stored undiluted. This product is photosensitive and should be protected from light.</p> <p>Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.</p>
<b>Shelf Life</b>	18 months from date of despatch.
<b>Health And Safety Information</b>	<p>Material Safety Datasheet documentation #10371 available at:</p> <p>10371: <a href="https://www.bio-rad-antibodies.com/uploads/MSDS/10371.pdf">https://www.bio-rad-antibodies.com/uploads/MSDS/10371.pdf</a></p>
<b>Regulatory</b>	For research purposes only

## Related Products

### Recommended Negative Controls

[MOUSE IgM NEGATIVE CONTROL:FITC \(MCA692F\)](#)

### Recommended Useful Reagents

[HUMAN SEROBLOCK \(BUF070A\)](#)

[HUMAN SEROBLOCK \(BUF070B\)](#)

<b>North &amp; South America</b>	<p>Tel: +1 800 265 7376</p> <p>Fax: +1 919 878 3751</p> <p>Email: <a href="mailto:antibody_sales_us@bio-rad.com">antibody_sales_us@bio-rad.com</a></p>	<b>Worldwide</b>	<p>Tel: +44 (0)1865 852 700</p> <p>Fax: +44 (0)1865 852 739</p> <p>Email: <a href="mailto:antibody_sales_uk@bio-rad.com">antibody_sales_uk@bio-rad.com</a></p>	<b>Europe</b>	<p>Tel: +49 (0) 89 8090 95 21</p> <p>Fax: +49 (0) 89 8090 95 50</p> <p>Email: <a href="mailto:antibody_sales_de@bio-rad.com">antibody_sales_de@bio-rad.com</a></p>
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