

TECHNICAL DATA SHEET

CyFlow™ CD20 APC Anti-Hu; Clone LT20

REF CJ698261

For Research Use Only.

Not for use in diagnostic or therapeutic procedures.

Specifications

Antigen	CD20
Alternative Names	B1, Bp35
Clone	LT20
Clonality	monoclonal
Format	APC
Host / Isotype	Mouse / IgG2a
Species Reactivity	Human
Negative Species Reactivity	—
Quantity	100 tests
Immunogen	Normal human lymphocytes from lymph node

Specificity

The mouse monoclonal antibody LT20 recognizes CD20 antigen, a 33-37 kDa non-glycosylated membrane receptor with four transmembrane domains, expressed on pre-B lymphocytes, resting and

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activated B cells (not plasma cells), follicular dendritic cells, and at low levels on peripheral blood T lymphocytes.

Application

The reagent is designed for Flow Cytometry analysis of human blood cells. Recommended usage is 10 µl reagent / 100 µl of whole blood or 10⁶ cells in a suspension. The content of a vial (1 ml) is sufficient for 100 tests.

Other usages may be determined from the scientific literature.

Storage Buffer

The reagent is provided in stabilizing phosphate buffered saline (PBS) solution, pH ≈7.4, containing 0.1% (w/v) sodium azide.

Storage and Stability

Storage	Avoid prolonged exposure to light. Store in the dark at 2-8°C. Do not freeze.
Stability	Do not use after expiration date stamped on vial label.

Background Information

CD20 (B1, Bp35) is a cell surface 33-37 (depending on the degree of phosphorylation) kDa non-glycosylated surface phosphoprotein expressed on mature and most malignant B cells, but not stem cells or plasma cells (low number of the CD20 has been also detected on a subpopulation of T lymphocytes and it can be expressed on follicular dendritic cells). Its expression on B cells is synchronous with the expression of surface IgM. CD20 regulates transmembrane calcium conductance (probably functioning as a component of store-operated calcium channel), cell cycle progression and B-cell proliferation. It is associated with lipid rafts, but the intensity of this association depends on extracellular triggering, employing CD20 conformational change and/or BCR (B cell antigen receptor) aggregation. After the receptor ligation, BCR and CD20 colocalize and then rapidly dissociate before BCR endocytosis, whereas CD20 remains at the cell surface. CD20 serves as a useful target for antibody-mediated therapeutic depletion of B cells, as it is expressed at high levels on most B-cell malignancies, but does not become internalized or shed from the plasma membrane following mAb treatment.

References

- Hultin LE, Hausner MA, Hultin PM, Giorgi JV: CD20 (pan-B cell) antigen is expressed at a low level on a subpopulation of human T lymphocytes. Cytometry. 1993; 14(2):196-204. < PMID: 7523045 >

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- Mason D, Simmons D, Buckley C, Schwartz-Albiez R, Hadam M, Saalmuller A, Clark E, Malavasi F, Morrissey JA (Eds): Leucocyte Typing VII. Oxford University Press. 2002; 1-945. < NLM ID: 101177131 >
- Polyak MJ, Deans JP: Alanine-170 and proline-172 are critical determinants for extracellular CD20 epitopes: heterogeneity in the fine specificity of CD20 monoclonal antibodies is defined by additional requirements imposed by both amino acid sequence and quaternary structure. Blood. 2002 May 1; 99(9):3256-62. < PMID: 11964291 >
- Petrie RJ, Deans JP: Colocalization of the B cell receptor and CD20 followed by activation-dependent dissociation in distinct lipid rafts. J Immunol. 2002 Sep 15; 169(6):2886-91. < PMID: 12218101 >
- Chan HT, Hughes D, French RR, Tutt AL, Walshe CA, Teeling JL, Glennie MJ, Cragg MS: CD20-induced lymphoma cell death is independent of both caspases and its redistribution into triton X-100 insoluble membrane rafts. Cancer Res. 2003 Sep 1; 63(17):5480-9. < PMID: 14500384 >
- Li H, Ayer LM, Polyak MJ, Mutch CM, Petrie RJ, Gauthier L, Shariat N, Hendzel MJ, Shaw AR, Patel KD, Deans JP: The CD20 calcium channel is localized to microvilli and constitutively associated with membrane rafts: antibody binding increases the affinity of the association through an epitope-dependent cross-linking-independent mechanism. J Biol Chem. 2004 May 7; 279(19):19893-901. < PMID: 14976189 >
- Cragg MS, Walshe CA, Ivanov AO, Glennie MJ: The biology of CD20 and its potential as a target for mAb therapy. Curr Dir Autoimmun. 2005; 8:140-74. < PMID: 15564720 >
- Teeling JL, Mackus WJ, Wiegman LJ, van den Brakel JH, Beers SA, French RR, van Meerten T, Ebeling S, Vink T, Slootstra JW, Parren PW, Glennie MJ, van de Winkel JG: The biological activity of human CD20 monoclonal antibodies is linked to unique epitopes on CD20. J Immunol. 2006 Jul 1; 177(1):362-71. < PMID: 16785532 >
- Filatov AV, Krotov GI, Zgoda VG, Volkov Y: Fluorescent immunoprecipitation analysis of cell surface proteins: a methodology compatible with mass-spectrometry. J Immunol Methods. 2007 Jan 30; 319(1-2):21-33. < PMID: 17098248 >
- Glennie MJ, French RR, Cragg MS, Taylor RP: Mechanisms of killing by anti-CD20 monoclonal antibodies. Mol Immunol. 2007 Sep; 44(16):3823-37. < PMID: 17768100 >

The Safety Data Sheet for this product is available at www.sysmex-partec.com/services.

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