TECHNICAL DATA SHEET

CyFlow™ CD20 PE-Cy7
Anti-Hu; Clone 2H7

REF **BC091190**

For Research Use Only.

Not for use in diagnostic or therapeutic procedures.

Specifications

Antigen	CD20
Alternative Names	B1, Bp35
Clone	2H7
Clonality	monoclonal
Format	PE-Cy7
Host / Isotype	Mouse / IgG2b
Species Reactivity	Human, Non-Human Primates
Negative Species Reactivity	—
Quantity	100 tests
Immunogen	Human tonsillar B cells

Specificity

The mouse monoclonal antibody 2H7 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 4 µl reagent / 100 µl of whole blood or 10^6 cells in a suspension. The content of a vial (0.4 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.

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References

- Clark EA, Yokochi T: Human B Cell and B cell blast-associated Surface Molecules defined with Monoclonal Antibodies. in: Leucocyte Typing — Bernard A, et al. (Eds). 1984; 339-346.:339-346. < PMID: Springer 68857-7_23 >
- McMichael AJ, Beverley PCL, Cobbold S, et al. (Eds): Leucocyte Typing III, White Cell Differentiation Antigens. Oxford University Press, Oxford. 1987; 1-1050. < NLM ID: 8913266 >
- Knapp W, Dorken B, Gilks W, Rieber EP, Schmidt RE, Stein H, von dem Borne AEGK (Eds): Leucocyte Typing IV. Oxford University Press, Oxford. 1989; 1-1820. < NLM ID: 8914679 >
- Doussis IA, Gatter KC, Mason DY: CD68 reactivity of non-macrophage derived tumours in cytological specimens. J Clin Pathol. 1993 Apr; 46(4):334-6. < PMID: 7684403 >
- Deans JP, Kalt L, Ledbetter JA, Schieven GL, Bolen JB, Johnson P: Association of 75/80-kDa phosphoproteins and the tyrosine kinases Lyn, Fyn, and Lck with the B cell molecule CD20: Evidence against involvement of the cytoplasmic regions of CD20. J Biol Chem. 1995 Sep 22; 270(38):22632-8. < PMID: 7545683 >
- Deans JP, Robbins SM, Polyak MJ, Savage JA: Rapid redistribution of CD20 to a low density detergent-insoluble membrane compartment. J Biol Chem. 1998 Jan 2; 273(1):344-8. < PMID: 9417086 >
- 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 >
- Rose AL, Smith BE, Maloney DG: Glucocorticoids and rituximab in vitro: synergistic direct antiproliferative and apoptotic effects. Blood. 2002 Sep 1; 100(5):1765-73. < PMID: 12176898 >
- Polyak MJ, Ayer LM, Szczepek AJ, Deans JP: A cholesterol-dependent CD20 epitope detected by the FMC7 antibody. Leukemia. 2003 Jul; 17(7):1384-9. < PMID: 12835728 >
- 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 >
- Diehl SA, Schmidlin H, Nagasawa M, van Haren SD, Kwakkenbos MJ, Yasuda E, Beaumont T, Scheeren FA, Spits H: STAT3-mediated up-regulation of BLIMP1 Is coordinated with BCL6 down-regulation to control human plasma cell differentiation. J Immunol. 2008 Apr 1; 180(7):4805-15. < PMID: 18354204 >

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• Hayden-Ledbetter MS, Cerveny CG, Espling E, Brady WA, Grosmaire LS, Tan P, Bader R, Slater S, Nilsson CA, Barone DS, Simon A, Bradley C, Thompson PA, Wahl AF, Ledbetter JA: CD20-directed small modular immunopharmaceutical, TRU-015, depletes normal and malignant B cells. Clin Cancer Res. 2009 Apr 15; 15(8):2739-46. < PMID: 19351771 >

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

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