



T4-638-T100

Monoclonal Antibody to CD20 APC-Cy™7 conjugated (100 tests)

Clone:	2H7
Isotype:	Mouse IgG2b
Specificity:	The mouse monoclonal antibody 2H7 recognizes CD20 (B1, Bp35), a 33-37 kDa non-glycosylated membrane receptor with four transmembrane domains, expressed on pre-B lymphocytes, resting and activated B cells (not plasma cells), follicular dendritic cells, and at low levels on peripheral blood T lymphocytes. HLDA IV; WS Code B201
Regulatory Status:	RUO
Immunogen:	Human tonsillar B cells
Species Reactivity:	Human, Non-Human Primates
Preparation:	The purified antibody is conjugated with tandem dye APC-Cy™7 under optimum conditions. The conjugate is purified by size-exclusion chromatography and adjusted for direct use. No reconstitution is necessary.
Storage Buffer:	The reagent is provided in stabilizing phosphate buffered saline (PBS) solution containing 15mM sodium azide.
Storage / Stability:	Store in the dark at 2-8°C. Do not freeze. Avoid prolonged exposure to light. Do not use after expiration date stamped on vial label.
Usage:	The reagent is designed for Flow Cytometry analysis of human blood cells using 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.
Expiration:	See vial label
Lot Number:	See vial label
Background:	CD20 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.

For laboratory research only, not for drug, diagnostic or other use.

**Antibodies****References:**

- *Leukocyte Typing Human B Cell and B cell blast-associated Surface Molecules defined with Monoclonal Antibodies, Clerk et al., 1984, pg. 339-346.
- *Leukocyte Typing III., McMichael M.J. et al. (Eds.), Oxford University Press (1987); p.611.
- *Leukocyte Typing IV., Knapp W. et al. (Eds.), Oxford University Press (1989).
- *Leukocyte Typing V., Schlossman S. et al. (Eds.), Oxford University Press (1995).
- *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.
- *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.
- *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.
- *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.
- *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.
- *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.
- *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.
- *Polyak MJ, Ayer LM, Szczypek AJ, Deans JP: A cholesterol-dependent CD20 epitope detected by the FMC7 antibody. *Leukemia.* 2003 Jul;17(7):1384-9.
- *And many other.

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