ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

CD20-1731-P acetylated human CD20 C- cyclic peptide(170- 173, 3 a.a)

□ Cat. # CD20-1731-P Human CD20/MS4A1 peptide (Acetyl-cPYaNPSLc, 9-aa); ANPS motif SIZE: 100 ug

CD20 is a 33- to 36-kDa transmembrane phosphoprotein involved in the activation, proliferation, and differentiation of B lymphocytes. The amino acid sequence of human CD20 is 297 aa in length, while that of mouse CD20 is 291 aa in length. The predicted amino acid sequence of the CD20 suggests 4 transmembrane-spanning regions with both N and C-termini located in the cytoplasm and 2 extracellular regions: large 44–amino acid loop (aa 142-184), which is the contact site of most anti-CD20 monoclonal antibodies (mAbs) available, including rituximab, and small loop (aa 72-80), which is the contact site of human anti-CD20 mAbs. The sequence of the CD20 protein indicates that this molecule is tightly bound to the cell surface membrane.

CD20 appears ideal as a target for unconjugated mAbs. It is highly expressed in the plasma membrane of almost all B cells, but not hematological stem cells; it normally remains at the cell surface even after cross-linking with mAbs; and it is not shed from the surface to block binding by mAbs. Significant levels of circulating CD20 (cCD20) can be detected in the plasma of patients with chronic lymphocytic leukemia (CLL).

The mouse/human chimeric CD20 mAb rituximab was the first cancer therapeutic mAb to be given Food and Drug Administration (FDA) approval and since then has become the most important new treatment for B cell malignancies in the last decade . Rituximab is now fully integrated into the management of non-Hodgkin's lymphoma patients, with most receiving mAb either as a single agent or more often given in combination with chemotherapy. It is also producing encouraging results when combined with chemotherapy in the treatment of chronic lymphocytic leukemia (CLL), particularly in patients without prior therapy. Rituximab is furthermore finding use in autoimmune diseases, such as rheumatoid arthritis, where it has been shown to markedly improve symptoms and has recently been approved by the FDA for patients with moderate to advanced disease. Two amino acid sequences of the CD20 antigen, ANPS and YCYSI at positions 170 to 173 and 182 to 185, were recently determined to be the critical binding sites for rituximab.

Cyclic S-S acetylated peptide Rp15-C (acPYANPSLc) containing the motif ANPS of human CD20 large extracellular loop strongly reacted with rituximab and inhibited its binding to CD20+ human Raji B-lymphoid cells, reacted with mAb 1F5 and to a lower extent with mAb AT80; it did not react with mAbs B1, LT20, and 2H7. Rp15-C inhibited the binding of rituximab to raft-associated CD20 and rituximab-induced membrane ceramide on human lymphoid Daudi cells. Antibodies recognizing CD20 were induced in 2 of 5 BALB/c mice immunized with Rp15-C. Rp15-C elicited, in immunized mice, anti-CD20 antibodies that stain CD20+ cells with a punctate pattern similar to that of rituximab.

Specificity

Peptide sequence of Rp15-C has extra Y and 2 C residues and one substitution (L for E) as compared to the corresponding sequence of human CD20.

Sources of Peptides

Cat. # CD20-1731-P
Sequence: acPYANPSLc
Mol. Wt: 967
Formula: $C_{43}H_{65}N_{10}O_{13}S_2$
Form: Powder/ Soln.
Storage: Store powder at -20°C for up to 6 months.

After reconstitution in water, store solution in small aliquots at -20°C for 3-6 months. Do not freeze and thaw or store diluted solutions.

General References: Teeling J. L. et al. (2006) J. Immunol., 177, 362–371; Roberts W. K. et al. (2002) Blood , 99, 3748-3755; Binder M. et al. (2006) Blood, 108, 1975-1978; Polyak M. J., and Deans J. P. (2002) Blood, 99, 3256-3262; Perosa F. et al. (2006) Blood, 107, 1070-1077; Perosa F. et al. (2007) J. Immunol., 179: 7967–7974; Perosa F. et al. (2009) J. Immunol., 182: 416–423.

In vitro research use only

Related items

Catalog#	ProdDescription
CD20-141-R	Recombinant Human CD20/MS4A1-mFC fusion Protein (141-184, 44-aa, ECD, rituximab-binding peptide)
CD20-142-P	Human CD20/MS4A1 linear peptide (142-184, 43-aa, extracellular domain) rituximab-binding peptide, >95% pure
CD20-145-R	Recombinant (HEK cells) purified human CD20/MS4A1 (213-297 aa) his tag Protein
CD20-146-R	Recombinant (HEK cells) human CD20/MS4A1 (141-184 aa) hFc- fusion Protein
CD20-147-R	Recombinant (HEK cells) purified Ferrret CD20/MS4A1 (213-297 aa) his tag Protein
CD20-165-P	human CD20/MS4A1 linear peptide (165-184, 20-aa, extracellular domain) broad reactivity with CD20-specific antibodies
CD20-1731-P	Human CD20/MS4A1 peptide (Acetyl-cPYaNPSLc, 9-aa, Cyclic Cys1-Cys9); contains ANPS motif and reactivity with Rituximab
CD20-1732-P	Human CD20/MS4A1 cylcic peptide (Acetyl-cWAANPSMAc, 11 aa, Cys1-Cys11); contains the ANPS motif and avidity for rituximab
CD20-1733-P	Human CD20/MS4A1 cyclic peptide (Acetyl-cPYsNPSLc; 9aa, Cys1-Cys9; contains NPS motif and react with rituximab
CD20-182-P	Human CD20/MS4A1 linear peptide (CWWEWTIGC, 9-aa) contains motif WEWTI of human CD-20 for rtiuximab
CD20-21-M	Monoclonal Anti-Human CD20/MS4A1 peptide (EC-domain, rituximab binding) ascites
CD20-22-A	Anti-Human CD20/MS4A1 peptide (EC-domain, rituximab binding domain) IgG, aff pure
CD20-22-P	Anti-Human CD20/MS4A1 control/blocking peptide (EC-domain, rituximab binding domain)
CD20-23-M	Humanized (chimeric) Anti-Human CD20/MS4A1 IgG (rituximab biosimilar), pure
CD20F-100	Anti-Human CD20-FITC conjugate
CD20P-100	Anti-Human CD20-PE conjugate
CD20PC-100	Anti-Human CD20-PE-Cy5-conjugate
CD20-RP1L-P	CD20/MS4A1 linear peptide (WPRWLEN, 7-aa) contains motif WPXWLE, 6-aa; Rp1L-1) and reacts with rituximab
CD20-RP5L-P	CD20/MS4A1 linear peptide (QDKLTQWPKWLEg, 13-aa) contains WPXWLE motif and reacts with rituximab
CD20UL-100	Anti-Human CD20 IgG, Unlabeled

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com