

SM415APC**Monoclonal Antibody to CD45 - APC****Alternate names:**

CD45, EC 3.1.3.48, L-CA, LCA, Leukocyte common antigen, PTPRC, T200

Quantity:

100 Tests

Background:

CD45 is a family of single chain transmembraneous glycoproteins consisting of at least four isoforms (220, 205, 190, 180 kDa) which share a common large intracellular domain. Their extracellular domains are heavily glycosylated. The different isoforms are produced by alternative messenger RNA splicing of three exons of a single gene on chromosome 1. CD45 is expressed on cells of the human hematopoietic lineage (including hematopoietic stem cells) with the exception of mature red cells. It is not detected on differentiated cells of other tissues. It is likely that CD45 plays an important role in signal transduction, inhibition or upregulation of various immunological functions. Antibodies recognising a common epitope on all of the isoforms are termed CD45 whilst those recognising only individual isoforms are termed CD45RA or CD45RO etc.

Host / Isotype:

Rat / IgG2b

Clone:

YKIX716.13

Immunogen:

Canine thymocytes.
Spleen cells from immunised DA rats were fused with cells of the Y3/Ag1.2.3 rat myeloma cell line.

Format:

State: Lyophilized purified IgG fraction
Purification: Affinity Chromatography on Protein G
Buffer System: PBS
Preservatives: 0.09% Sodium Azide
Stabilizers: 1% BSA, 5% Sucrose
Label: APC – Allophycocyanin
Reconstitution: Restore with 1 ml distilled water

Applications:

Flow Cytometry (Neat).
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:

Clustered as Canine CD45 in the First Canine Leukocyte Antigen Workshop: immunoprecipitates antigen of 180/200kD from Con-A blasts (1).
This antibody reacts with CD45 on all outbred mongrels and beagles tested.
Rat anti Dog CD45 antibody, clone YKIX716.13 recognizes Canine CD45 also known as leukocyte common antigen clustered as Canine CD45 in the First Canine Leukocyte Antigen Workshop (CLAW).
Clone YKIX 716.13: immunoprecipitates an antigen of 180/200kD from Con-A blasts (Cobbold et al. 1994). CD45 is expressed on all leukocytes in canine peripheral blood.
Rat anti Dog CD45 antibody, clone YKIX716.13 reacts with CD45 on all outbred mongrels and beagles tested and may be against CD45RB isoform.
Species: Canine (Dog).
Other species not tested.

Storage:

Store the antibody undiluted Prior to and after reconstitution at 2-8°C.

This product is photosensitive and should be protected from light.

DO NOT FREEZE!

Shelf life: One year from despatch.

General Readings:

1. Cobbold S, Metcalfe S. Monoclonal antibodies that define canine homologues of human CD antigens: summary of the First International Canine Leukocyte Antigen Workshop (CLAW). *Tissue Antigens*. 1994 Mar;43(3):137-54. PubMed PMID: 8091414.
2. Reis AB, Teixeira-Carvalho A, Giunchetti RC, Guerra LL, Carvalho MG, Mayrink W, et al. Phenotypic features of circulating leucocytes as immunological markers for clinical status and bone marrow parasite density in dogs naturally infected by *Leishmania chagasi*. *Clin Exp Immunol*. 2006 Nov;146(2):303-11. PubMed PMID: 17034583.
3. Stein VM, Schreiner NM, Moore PF, Vandeveld M, Zurbriggen A, Tipold A. Immunophenotypical characterization of monocytes in canine distemper virus infection. *Vet Microbiol*. 2008 Oct 15;131(3-4):237-46. doi: 10.1016/j.vetmic.2008.03.009. Epub 2008 Apr 1. PubMed PMID: 18472370.
4. Sanchez MA, Diaz NL, Zepa O, Negron E, Convit J, Tapia FJ. Organ-specific immunity in canine visceral leishmaniasis: analysis of symptomatic and asymptomatic dogs naturally infected with *Leishmania chagasi*. *Am J Trop Med Hyg*. 2004 Jun;70(6):618-24. PubMed PMID: 15211002.
5. Modiano, J.F. and Helfand, S.C. (2011) Early detection of hemangiosarcoma and angiosarcoma Patent Application No.11/662529
6. Tominaga M, Horiuchi Y, Ichikawa M, Yamashita M, Okano K, Jikumaru Y, et al. Flow cytometric analysis of peripheral blood and tumor-infiltrating regulatory T cells in dogs with oral malignant melanoma. *J Vet Diagn Invest*. 2010 May;22(3):438-41. PubMed PMID: 20453222.
7. Zentek, J. et al. (2002) Morphology and immunopathology of the small and large intestine in dogs with nonspecific dietary sensitivity. *J Nutr*. 132: 1652S-4S.
8. Hunter MJ, Tuschong LM, Fowler CJ, Bauer TR, Burkholder TH, Hickstein DD. Gene therapy of canine leukocyte adhesion deficiency using lentiviral vectors with human CD11b and CD18 promoters driving canine CD18 expression. *Mol Ther*. 2011 Jan;19(1):113-21. doi: 10.1038/mt.2010.203. Epub 2010 Sep 21. PubMed PMID: 20859258.
9. Comazzi S, Gelain ME, Spagnolo V, Riondato F, Guglielmino R, Sartorelli P. Flow cytometric patterns in blood from dogs with non-neoplastic and neoplastic hematologic diseases using double labeling for CD18 and CD45. *Vet Clin Pathol*. 2006 Mar;35(1):47-54. PubMed PMID: 16511791.
10. Giantin M, Aresu L, Aricò A, Gelain ME, Riondato F, Martini V, et al. Evaluation of tyrosine-kinase receptor c-KIT (c-KIT) mutations, mRNA and protein expression in canine leukemia: might c-KIT represent a therapeutic target? *Vet Immunol Immunopathol*. 2013 Apr 15;152(3-4):325-32. doi: 10.1016/j.vetimm.2013.01.003. Epub 2013 Jan 16. PubMed PMID: 23375718.
11. Trichler SA, Bulla SC, Thomason J, Lunsford KV, Bulla C. Ultra-pure platelet isolation from canine whole blood. *BMC Vet Res*. 2013 Jul 17;9:144. doi: 10.1186/1746-6148-9-144. PubMed PMID: 23866028.
12. Aresu L, Aricò A, Comazzi S, Gelain ME, Riondato F, Mortarino M, et al. VEGF and MMP-9: biomarkers for canine lymphoma. *Vet Comp Oncol*. 2014 Mar;12(1):29-36. doi:

10.1111/j.1476-5829.2012.00328.x. Epub 2012 Apr 10. PubMed PMID: 22489798.
 13. Salinas Tejedor, L. et al. (2015) Mesenchymal stem cells do not exert direct beneficial effects on CNS remyelination in the absence of the peripheral immune system. Brain Behav Immun. pii: S0889-1591(15)00233-0.

Pictures:

SM415APC staining of canine peripheral blood lymphocytes.

