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CD-Antigen specific antibodies

Antigen CD3 antigen (Epsilon polypeptide) antibodies Cat # CD3-101AP, P-CD3 and PC-CD3.

Alternate Nomenclature: CD3E antigen, CD3Epsilon polypeptide, human T3 epsilon chain, TiT3 complex.

The antigen receptor on human T lymphocytes consists of two variable immunoglobulin-like glycoproteins, alpha and beta or TCR-gama and delta, which occur in association (noncovalently) with three invariable T3 membrane proteins (CD3-gamma, CD3-delta and CD3 epsilon). In humans two of these proteins, T3-gamma and T3-delta, are glycoproteins of relative molecular mass (Mr) 25,000 (25K) and 20,000 (20K), respectively, while the third, T3-epsilon, is a 20K non-glycosylated protein. A keystone of the antigen-specific immune response is the T-cell receptor (TCR)/CD3 complex. CD3 antigen has gamma, delta, epsilon, and theta chains. The CD3 complex consist of various chains (alfa, beta, gamma, theta, epsilon and delta) mediates signal transduction in T cell receptor cells. The TCR/CD3 complex of T-lymphocytes consists of either a TCR alpha/beta or TCR gamma/delta heterodimer co-expressed at the cell surface with the invariant subunits of CD3 labeled gamma, delta, epsilon, zeta, and eta. The infection of CD3 positive cells with HTLV led to a decrease in CD3 antigen expression. The onset of this phenomenon coincided with a decrease of CD3 γ followed by the subsequent progressive reduction in CD3 δ , then CD3 ϵ and CD3 ζ mRNA. This decrease in CD3 expression is a direct result of epigenetic control regulation of CD3 genes as determined by DNase I hyper sensitivity assay (DHS) (1).

Antibodies to CD3 epsilon chain is a glycosylated protein of 290 amino acids with a single trans-membrane spanning domain residing between 127-149 with an apparent MW of 20 kDa. The epsilon chain of CD3 complex is non-glycosylated and is involved in rapid turnover of phosphotidylserine and accumulation of intracellular Ca after antigen receptor activation on T cell. The CD3 epsilon gene consist of nine exons and three mini exons of 21, 15 and 18 bases, the epsilon gene is transcribed form weak, tissue non-specific TATA less promoter (2).

The CD3E-selective (CD3 epsilon chain) antibodies were generated against peptide form unique region of the CD3 gene that is not present in other CD3 antigen chains or other cellular proteins. The antigenic sequence was common in several species but distinct from other CD antigens. FabGennix Inc. has generated epitope specific anti-CD3E mono-epitope-specific antibodies utilizing cyclic peptide methodology. The Anti-CD3 antibodies have been fully characterized for cross reactivity with other cellular proteins using Western blot analyses and IHC applications. CD3 antibodies are also available in FITC-conjugated form. Limited quantities of antigenic blocking peptide and Western blot positive controls in ready-to-use buffer for CD3 are also available. FabGennix International Inc., will conjugate this antibody to fluorophores and to secondary enzymes at a nominal charge. FabGennix also carry a wide selection of antibodies against CD antigens for a complete listing please visit www.FabGennix.com.

Catalog #	Description	Antigen/Positive control	Cross reactivity	Qty/vol
CD3-101AP	CD3 (epsilon) chain affinity purified antibodies	Peptide antibody	R, M, H others	100ug/200ul
FITC-CD3	FITC-conjugated CD3 antibodies	Fluorophore conjugated Abs	R, M, H, others	100ug/200ul
P-CD3	Antigenic blocking peptide for CD3-101AP	Synthetic peptide	n/a	250ug/100ul
*PC-CD3	Western blot positive control for CD3	Partially purified CD3 protein	N/A	5 appl/150ul

R = rat; M = mouse; H = humans; R = rabbit * Actual volume is 103-110 μ l; WB, Western Blot analyses; IMM, Immunoprecipitation; IHC, Immunohistochemistry, n.d. not determine.

Immunogen: Synthetic peptide from amino acids 186-206 corresponding to the following sequence (DYPIRKGQRDLYSGLNQRRI), was selected from the unique region of the CD3 protein, peptide was post-synthetically modified to achieve highest antigenicity before used for coupling to KLH using heterobifunctional cross linker for immunogen preparation.

Concentration: CD3-101AP and FITC-CD4 antibodies are at concentrations 0.6-0.68mg/ml in antibody stabilization buffer.

Applications: Antibody dilution 1:2,000 for ELISA or DOT blot assay. W.B: Antibody dilution 1:500-1,000 for WB using PC-CD3. IMM: n.d; IHC dilutions in DiluOBuffer at 1:200-250

Reactivity The antibodies CD3-101AP antibody labels a 20kDa band of CD3 in PC-CD4 samples using antibody dilution at 750 in diluObuffer.

Protocols: Standard protocol for various applications (Western blot; immunoprecipitation and immunohistochemistry) of this antibody is provided with the product specification sheet, however, FabGennix Inc. recommends investigators to optimize conditions.

Form/Storage: The antiserum is supplied in antibody stabilization buffer with preservatives. For long-term storage of antibody, store at -20°C FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45 μ filter after every use for long-term storage.

Note: Now you can recycle your western blots (nitrocellulose, supported membranes and PVDF membranes) by using our StripOBuffer (Cat FGI-1989). Each stripping is guaranteed to give better signal (up to 8 stripping). No strong pungent smell of reducing agents or heating is required.

***Note:** Briefly centrifuge to collect liquid, heat or boil PC-CD3 tube for 1-2 minutes to dissolve any precipitate before use. This product is "ready-to-use" for electrophoresis. After thawing store at room temperature, Repeated freezing and thawing may result in appearance of higher molecular weight immunoreactive bands.

References:

- Haidar Akl, Bassam Badran, Gratiela Dobirta, Germain Manfouo-Foutsop, Maria Moschitta, Makram Merimi, Arsène Burny, Philippe Martiat and Karen E Willard-Gallo. Progressive loss of CD3 expression after HTLV-I infection results from chromatin remodeling affecting all the CD3 genes and persists despite early viral genes silencing. *Virology* 2007; 4: 85-2007.
- Clevers HC, Dunlap S, Wileman TE, Terhorst C. Human CD3-epsilon gene contains three minixons and is transcribed from a non-TATA promoter. *Proc Natl Acad Sci U S A*. 1988 Nov;85(21):8156-60.

* For users who may require large amounts of CD3-101AP and FITC-CD3, please enquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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