

Monoclonal Antibody to Human BB-1 -FITC

Alternate names:	BB1
Catalog No.:	SM1302F
Quantity:	100 Tests
Concentration:	0.2 mg/ml
Host / Isotype:	Mouse / IgM
Recommended Isotype Controls:	SM13F
Clone:	BB-1
Immunogen:	Herpes virus papio producer line 594-S-F9.

Format: This antibody is supplied as liquid, purified immunoglobulin fraction, conjugated to Fluorescein Isothiocyanate Isomer 1 (FITC) in PBS buffer with 0.1% sodium azide as preservative and 1% BSA as stabilizer. FITC:Protein (molar ratio): 7.2:1.0.

Format: **Label:** FITC

Applications: Flow cytometry: use 10 µl of neat antibody to label 10⁶ cells. Not suitable for paraffin embedded sections. Other applications not tested. Optimal dilutions of this antibody are dependent on conditions and should be determined by the user.
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Specificity: Reacts with a 60kD protein on activated B cells, macrophages and dendritic cells. The protein is the cell surface ligand for CD28 which is a key T cell surface molecule. Antigen-specific T cell activation depends on T cell receptor-ligand interaction and co-stimulatory signals generated when accessory molecules bind to their ligands such as CD28 to the BB1 accessory molecule. The BB1 ligand is also expressed by dendritic cells, and this cell expression increases after binding to allogeneic T cells. Recently, it has been found that the BB1 molecule is also expressed on some melanomas and perhaps on some other cancers. Two groups have shown recently that tumour cells transfected with BB1 become immunogenic and are rejected by the immune system. Uses of BB-1 monoclonal antibody include: greater understanding of how B cell accessory molecules regulate key interactions during development; insights into the control and management of diseases involved with B cell dysfunctions; separation and isolation of dendritic cells; and diagnosis of inflamed tissues and screening for solid cancers. The use of BB1 in cancer research includes determining whether or not tissues which express BB1 influence the cells or tumours to stimulate T cell proliferation, since interfering with BB1 interactions prevents T cells from proliferating. **IMPORTANT NOTE: (NOVEMBER 1997)** Very recent data has indicated that this antibody shows cross-reactivity with the human CD74 cell surface antigen. It is likely that this is due to a region of sequence similarity between the CD80 and CD74 molecules.

Appropriate care should therefore be exercised in the use of this reagent, and with the interpretation of any data obtained by its application (5).

Storage:

Store the antibody at 4-8°C for one month or at -20°C for longer. This product is photosensitive and should be protected from light. Avoid repeated freezing and thawing. Shelf life: one year from despatch.

General Readings:

1. Yokochi T, Holly RD, Clark EA. B lymphoblast antigen (BB-1) expressed on Epstein-Barr virus-activated B cell blasts, B lymphoblastoid cell lines, and Burkitt's lymphomas. *J Immunol.* 1982 Feb;128(2):823-7. PubMed PMID: 6274961.
2. Linsley PS, Clark EA, Ledbetter JA. T-cell antigen CD28 mediates adhesion with B cells by interacting with activation antigen B7/BB-1. *Proc Natl Acad Sci U S A.* 1990 Jul;87(13):5031-5. PubMed PMID: 2164219.
3. Koulova, L., Clark, E.A., Shu, G. and Dupont, B. (1991). The CD28 ligand B7/BB-1 provide costimulatory signal for alloactivation of CD4 + T cells. *J.Exp. Med.* 173: 759-762.
4. Young JW, Koulova L, Soergel SA, Clark EA, Steinman RM, Dupont B. The B7/BB1 antigen provides one of several costimulatory signals for the activation of CD4+ T lymphocytes by human blood dendritic cells in vitro. *J Clin Invest.* 1992 Jul;90(1):229-37. PubMed PMID: 1378854.
5. Freeman GJ, Cardoso AA, Boussiotis VA, Anumanthan A, Groves RW, Kupper TS, et al. The BB1 monoclonal antibody recognizes both cell surface CD74 (MHC class II-associated invariant chain) as well as B7-1 (CD80), resolving the question regarding a third CD28/CTLA-4 counterreceptor. *J Immunol.* 1998 Sep 15;161(6):2708-15. PubMed PMID: 9743327.