Technical Data Sheet

# Purified Rat Anti-Mouse CD80

## Product Information

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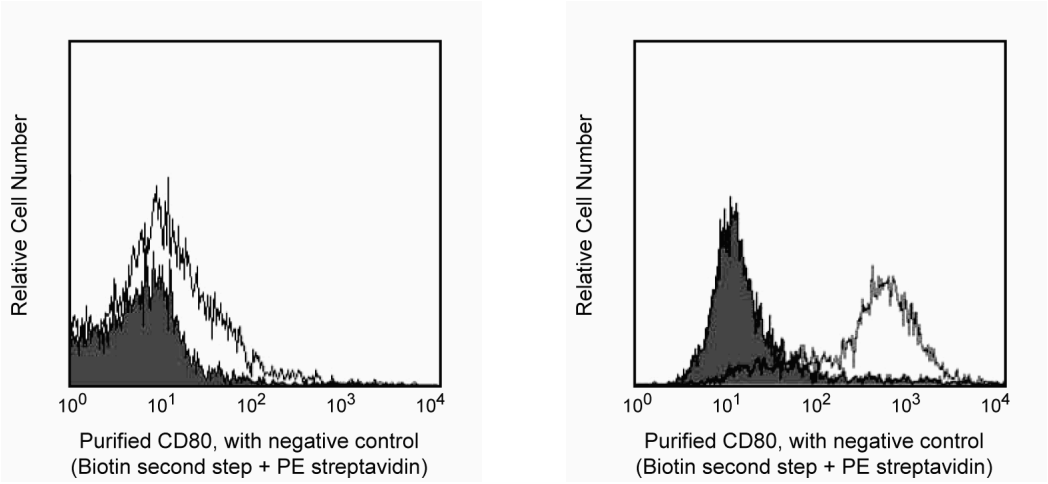
|---|---|
| **Material Number:** | **553368** |
| **Alternate Name:** | B7-1 |
| **Size:** | 0.5 mg |
| **Concentration:** | 0.5 mg/ml |
| **Clone:** | 1G10/B7 |
| **Immunogen:** | Activated Mouse 5C2 Cells |
| **Isotype:** | Rat IgG2a, κ |
| **Reactivity:** | QC Testing: Mouse |
| **Storage Buffer:** | Aqueous buffered solution containing ≤0.09% sodium azide. |

## Description

The 1G10 antibody reacts with CD80 (B7-1). This member of the Ig superfamily, along with CD86 (B7-2), participates in T-cell costimulation *via* interactions with CD28 and CD152 (CTLA-4). CD80 is constitutively expressed on dendritic cells, monocytes, and peritoneal macrophages; and it is inducible on B cells by various means, including activation by LPS, IL-4, and the cross-linking of surface Ig. Expression of CD80 is greatly enhanced on splenic B cells following activation by LPS, with peak expression occurring between 48 and 72 hours. It has been reported that activation of purified B cells with LPS can induce CD80 expression in as few as 18 hours. The 1G10 antibody blocks binding of CTLA-4-Ig to CD80, but it does not block stimulation of T cells by natural antigen-presenting cells. Preliminary evidence has shown that mAb 16-10A1 (Cat. no. 553766) blocks binding of 1G10 mAb to CD80, indicating that the two antibodies may recognize overlapping epitopes on the CD80 molecule. However, the 16-10A1 mAb recognizes an upregulated antigen on UV-irradiated P815 mastocytoma cells which is not detected by the 1G10 mAb; the cause and significance of this differential reactivity of the two anti-CD80 antibodies is unknown.




***Expression of membrane CD80 (B7-1) by mouse splenocytes.*** *Freshly isolated (left) or 72-hour LPS-stimulated BALB/c splenocytes (right) were stained with purified 1G10/B7 mAb (open histograms) or no primary mAb (shaded histograms). Staining was detected with biotinylated goat anti-rat Ig (Cat. No. 554014) followed by Streptavidin-PE (Cat. No. 554061). Viable resting lymphocytes (left) and blasts (right) were selected by scatter profile and dye exclusion (BD Pharmingen™ Via-Probe™, Cat. No. 555816/555815). Flow cytometry was performed on a FACScan™ (BD Biosciences, San Jose, CA).*

## Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at 4°C.

## Application Notes

**Application**

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| Flow cytometry | Tested During Development |

**Recommended Assay Procedure:**

Since this antigen is expressed at low density, it may be desirable to amplify staining by using a biotinylated second-step antibody followed by a "bright" third-step reagent, such as Streptavidin-PE (Cat. no. 554061). Other reported applications include blocking of ligand binding.

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## Suggested Companion Products

| Catalog Number | Name | Size | Clone |
|---|---|---|---|
| 553927 | Purified Rat IgG2a, κ Isotype Control | 0.5 mg | R35-95 |
| 554014 | Biotin Goat Anti-Rat Ig | 0.5 mg | Polyclonal |
| 554061 | PE Streptavidin | 0.5 mg | (none) |

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.

## References


Bluestone JA. New perspectives of CD28-B7-mediated T cell costimulation. *Immunity.* 1995; 2(6):555-559. (Clone-specific: (Co)-stimulation)

Boussiotis VA, Gribben JG, Freeman GJ, Nadler LM. Blockade of the CD28 co-stimulatory pathway: a means to induce tolerance. *Curr Opin Immunol.* 1994; 6(5):797-807. (Clone-specific: (Co)-stimulation)

Hathcock KS, Laszlo G, Pucillo C, Linsley P, Hodes RJ. Comparative analysis of B7-1 and B7-2 costimulatory ligands: expression and function. *J Exp Med.* 1994; 180(2):631-640. (Clone-specific: (Co)-stimulation)

Nabavi N, Freeman GJ, Gault A, Godfrey D, Nadler LM, Glimcher LH. Signalling through the MHC class II cytoplasmic domain is required for antigen presentation and induces B7 expression. *Nature.* 1992; 360(6401):266-268. (Immunogen)

Sojka DK, Donepudi M, Bluestone JA, Mokyr MB. Melphalan and other anticancer modalities up-regulate B7-1 gene expression in tumor cells. *J Immunol.* 2000; 164(12):6230-6236. (Biology)

Watts, TH. Personal Communication. . (Biology)