Technical Data Sheet

Purified Hamster Anti-Mouse CD54

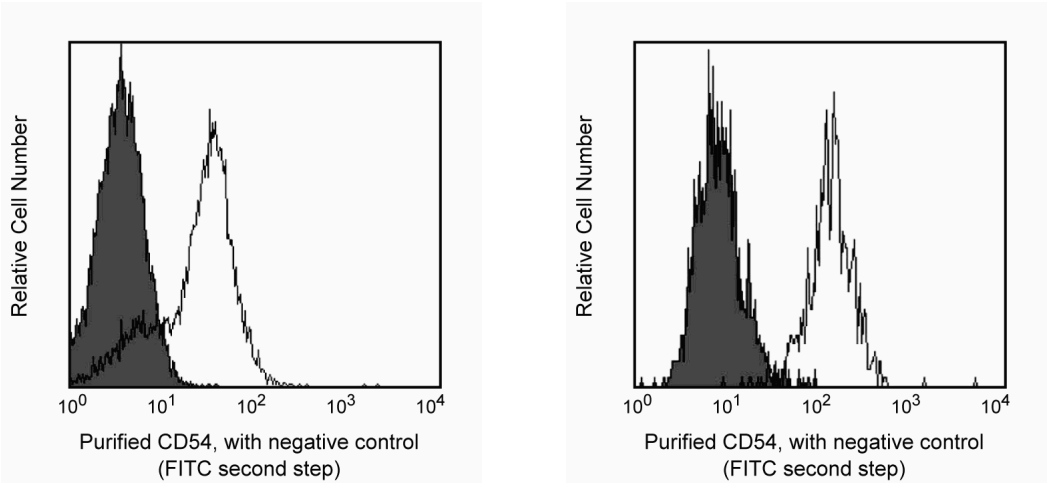
Product Information

Material Number:	**553250**
Alternate Name:	ICAM-1
Size:	0.5 mg
Concentration:	0.5 mg/ml
Clone:	3E2
Immunogen:	Not reported
Isotype:	Armenian Hamster IgG1, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The 3E2 antibody reacts with CD54 (ICAM-1), a 95-kDa member of the Ig superfamily found on lymphocytes, vascular endothelium, high endothelial venules, epithelial cells, macrophages, and dendritic cells. ICAM-1 is a ligand for LFA1 (CD11a/CD18) and Mac-1 (CD11b/CD18). Its expression is upregulated upon stimulation by inflammatory mediators such as cytokines and LPS. Studies with mouse *Icam1*-transfected antigen-presenting cells, with CD54-blocking antibodies, and in CD54-deficient mice indicate that CD54 participates in inflammatory reactions and antigen-specific immune responses. In addition, there is evidence that CD54 is a receptor involved in MHC-non-restricted responses to weakly immunogenic tumor cells. The 3E2 antibody blocks in vitro and in responses.

This antibody is routinely tested by flow cytometric analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.



Upregulation of CD54 expression on activated splenic B lymphocytes. *Left panel: Naive BALB/c splenocytes were stained with purified 3E2 mAb (open histogram) followed by FITC-conjugated anti-hamster IgG cocktail (Cat. No. 554011, filled and open histograms). Viable resting lymphocytes were gated according to scatter profile and exclusion of 7-AAD (BD Via-Probe™, Cat. No. 555816/555815). The mean fluorescence intensity of the stained lymphocytes is about 7.5 times greater than that of the negative-control lymphocytes. Right panel: 2-day LPS-activated BALB/c splenocytes were stained with purified 3E2 mAb (open histogram) followed by FITC-conjugated anti-hamster IgG (filled and open histograms). Viable B-cell blasts were gated according to scatter profile and exclusion of 7-AAD. The mean fluorescence intensity of the stained blasts is about 15 times greater than that of the negative-control blasts. Flow cytometry was performed on a BD FACScan™ flow cytometry system.*

Preparation and Storage

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

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Application Notes

Application

Flow cytometry	Routinely Tested
Blocking	Reported
Immunohistochemistry-frozen	Reported

Recommended Assay Procedure:

For IHC, we recommend the use of purified 3E2 mAb in our special formulation for immunohistochemistry, Cat. No. 550287.

Suggested Companion Products

Catalog Number	Name	Size	Clone
550287	Purified Hamster Anti-Mouse CD54	1.0 ml	3E2
553969	Purified Hamster IgG1, κ Isotype Control	0.5 mg	A19-3
554011	FITC Mouse Anti-Armenian and Syrian Hamster IgG Cocktail	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. Although hamster immunoglobulin isotypes have not been well defined, BD Biosciences Pharmingen has grouped Armenian and Syrian hamster IgG monoclonal antibodies according to their reactivity with a panel of mouse anti-hamster IgG mAbs. A table of the hamster IgG groups, Reactivity of Mouse Anti-Hamster Ig mAbs, may be viewed at http://www.bdbiosciences.com/pharmingen/hamster_chart_11x17.pdf.
4. 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.
5. Sodium azide is a reversible inhibitor of oxidative metabolism; therefore, antibody preparations containing this preservative agent must not be used in cell cultures nor injected into animals. Sodium azide may be removed by washing stained cells or plate-bound antibody or dialyzing soluble antibody in sodium azide-free buffer. Since endotoxin may also affect the results of functional studies, we recommend the NA/LE™ (No Azide/Low Endotoxin) antibody format, if available, for in vitro and in vivo use.

References

Gonzalo JA, Martinez C, Springer TA, Gutierrez-Ramos JC. ICAM-1 is required for T cell proliferation but not for anergy or apoptosis induced by Staphylococcus aureus enterotoxin B in vivo. *Int Immunol.* 1995; 7(10):1691-1698.(Biology)

Isobe M, Yagita H, Okumura K, Ihara A. Specific acceptance of cardiac allograft after treatment with antibodies to ICAM-1 and LFA-1. *Science.* 1992; 255(5048):1125-1127.(Biology)

Kelly KJ, Williams WW Jr, Colvin RB, et al. Intercellular adhesion molecule-1-deficient mice are protected against ischemic renal injury. *J Clin Invest.* 1996; 97(4):1056-1063.(Biology)

Masten BJ, Yates JL, Pollard Koga AM, Lipscomb MF. Characterization of accessory molecules in murine lung dendritic cell function: roles for CD80, CD86, CD54, and CD40L. *Am J Respir Cell Mol Biol.* 1997; 16(3):335-342.(Clone-specific: Blocking)

Nishio M, Podack ER. Rapid induction of tumor necrosis factor cytotoxicity in naive splenic T cells by simultaneous CD80 (B7.1) and CD54 (ICAM-1) co-stimulation. *Eur J Immunol.* 1996; 26(9):2160-2164.(Biology)

Nishio M, Spielman J, Lee RK, Nelson DL, Podack ER. CD80 (B7.1) and CD54 (intracellular adhesion molecule-1) induce target cell susceptibility to promiscuous cytotoxic T cell lysis. *J Immunol.* 1996; 157(10):4347-4353.(Biology)

Ritter DM, McKerrow JH. Intercellular adhesion molecule 1 is the major adhesion molecule expressed during schistosome granuloma formation. *Infect Immun.* 1996; 64(11):4706-4713.(Clone-specific: Immunohistochemistry)

Scheynius A, Camp RL, Pure E. Reduced contact sensitivity reactions in mice treated with monoclonal antibodies to leukocyte function-associated molecule-1 and intercellular adhesion molecule-1. *J Immunol.* 1993; 150(2):655-663.(Clone-specific: Blocking, Immunohistochemistry)

Scheynius A, Camp RL, Pure E. Unresponsiveness to 2,4-dinitro-1-fluoro-benzene after treatment with monoclonal antibodies to leukocyte function-associated molecule-1 and intercellular adhesion molecule-1 during sensitization. *J Immunol.* 1996; 154(5):1804-1809.(Biology)

Siu G, Hedrick SM, Brian AA. Isolation of the murine intercellular adhesion molecule 1 (ICAM-1) gene. ICAM-1 enhances antigen-specific T cell activation. *J Immunol.* 1989; 143(11):3813-3820.(Biology)

Soriano SG, Lipton SA, Wang YF, et al. Intercellular adhesion molecule-1-deficient mice are less susceptible to cerebral ischemia-reperfusion injury. *Ann Neurol.* 1996; 39(5):618-624.(Biology)

Springer TA. Adhesion receptors of the immune system. *Nature.* 1990; 346(6283):425-434.(Clone-specific: Blocking)

Springer TA. Traffic signals for lymphocyte recirculation and leukocyte emigration: the multistep paradigm. *Cell.* 1994; 76(2):301-314.(Biology)

Xu H, Gonzalo JA, St Pierre Y, et al. Leukocytosis and resistance to septic shock in intercellular adhesion molecule 1-deficient mice. *J Exp Med.* 1994; 180(1):95-109.(Biology)

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