

## MONOCLONAL ANTIBODY

CD157 (BST-1)

Cat. No.	Form	Quantity	Presentation
2040	Purified	0.1 mg	Freeze-dried
2557	FITC	50 tests	Liquid 1 mL

<b>Clone</b>	RF3
<b>Isotype</b>	IgG1 (mouse)
<b>Immunogen</b>	Bone marrow stromal cell line derived from a rheumatoid arthritis patient (RASV5-5).
<b>Hybridoma</b>	X 63 Ag8.653 x Mouse Balb/c spleen cells
<b>Specificity</b>	<p>The BST-1 protein (also called Mo5 or BP-3/IF-7) is a highly glycosylated glycosyl-phosphatidylinositol (GPI)-anchored membrane protein with a molecular weight of 42-45 kDa (1). The deduced amino sequence of human BST-1 has 33% identity with CD38 (2,3). As CD38, BST-1 displays ADP ribosyl cyclase activity and facilitates pre-B cell growth (2).</p> <p>In mouse, BST-1 is expressed in pancreatic islet cells (3). In the mouse thymus, BST-1 is expressed in pre-T cells and could play an important role in the expansion of pre-T cells committed to the <math>\alpha\beta</math> lineage (4).</p> <p>RF3 reacts with an external epitope of human BST-1 on several human cell lines including certain bone marrow stromal cells, human umbilical vein endothelial cells (HUVEC) U937 cell line (5) and FDC-1, a follicular dendritic cell line (6). In the peripheral blood of healthy donors, RF3 reacts with monocytes and granulocytes, but not with lymphocytes (7).</p> <p>Elevated levels of the soluble form of BST-1 have been detected in the sera of patients with severe rheumatoid arthritis, using an ELISA assay (8).</p> <p>RF3 has been assigned to the CD157 cluster of differentiation at the VIth International Workshop on Human Leukocyte Differentiation Antigens in Kobe, Japan (1996) (9).</p>
<b>Applications</b>	Fluorescent microscopy or flow cytometry
<b>Purification</b>	From ascites fluid by ammonium sulfate precipitation and affinity chromatography on protein A
<b>Buffer</b>	Freeze-dried form: PBS containing 1% sucrose and 0.1% sodium azide. Liquid form: PBS containing 1% BSA and 0.1% sodium azide.

September 29, 1997



**Reconstitution and Storage**

The freeze-dried form may be stored at 2-8°C until the expiration date stated on the vial label. Reconstitute with 100 µL of distilled water. The reconstituted form may be stored at -20°C for three months. Aliquotting is suggested to avoid multiple freeze-thaw cycles.

The conjugated forms should not be frozen and should be stored in the dark at 2-8°C until the expiration date stated on the vial label.

**Recommended Procedures**

Fluorescent microscopy or flow cytometry:

Liquid form: 20 µL /  $5 \times 10^5$  cells / test or 100 µL whole blood.

Freeze-dried form: 2 µg /  $5 \times 10^5$  cells / test.

**References**

- 1) Itoh, M., Ishihara, K., Tomizawa, H., Tanaka, H., Kobune, Y., Ishikawa, J., Kaisho, T., Hirano, T., "Molecular cloning of murine BST-1 having homology with CD38 and Aplysia ADP-ribosyl cyclase", 1994, Biochem. Biophys. Res. Commun., **203**, 2, 1309-1317.
- 2) Hirata, U., Kimura, N., Sato, K., Ohsugi, Y., Takasawa, S., Okamoto, H., Ishikawa, J., Kaisho, T., Ishihara, K., Hirano, T., "ADP ribosyl cyclase activity of a novel bone marrow stromal cell surface molecule, BST-1", 1994, FEBS letters, **356**, 244-248.
- 3) Kajimoto, Y., Miyagawa, J.I., Ishihara, K., Okuyama, Y., Fujitani, Y., Itoh, M., Yoshida, H., Kaisho, T., Matsuoka, T.A., Watada, H., Hanafusa, T., Yamasaki, Y., Kamada, T., Matsuzawa, Y., Hirano, T., "Pancreatic islet cells express BST-1, a CD38-like surface molecule having ADP-ribosyl cyclase activity", 1996, Biochem. Biophys. Res. Commun., **219**, 941-946.
- 4) Vicari, A.P., Bean, A.G.D., Zlotnik, A., "A role for BP-3/BST-1 antigen in early T cell development", 1996, Int. Immunol., **8**, 2, 183-191.
- 5) Kaisho, T., Ishikawa, J., Oritani, K., Inazawa, J., Tomizawa, H., Muraoka, O., Ochi, T., Hirano, T., "BST-1, a surface molecule of bone marrow stromal cell lines that facilitates pre-B-cell growth", 1994, Proc. Natl. Acad. Sci. USA, **91**, 5325-5329.
- 6) Clark, E.A., Grabstein, K.H., Gown, A.M., Skelly, M., Kaisho, T., Hirano, T., Shu, G.L., "Activation of B lymphocyte maturation by a human follicular dendritic cell line, FDC-1", 1995, J. Immunol., **155**, 545-555.
- 7) Okuyama, Y., Ishihara, K., Kimura, N., Hirata, Y., Sato, K., Itoh, M., Lee, B.O., Hirano, T., "Human BST-1 expressed on myeloid cells functions as a receptor molecule", 1996, Biochem. Biophys. Res. Commun., **228**, 838-845.
- 8) Lee, B.O., Ishihara, K., Denno, K., Kobune, Y., Itoh, M., Muraoka, O., Kaisho, T., Sasaki, T., Ochi, T., Hirano, T., "Elevated levels of the soluble form of bone marrow stromal cell antigen 1 in the sera of patients with severe rheumatoid arthritis", 1996, Arthritis/Rheum., **39**, 4, 629-637.
- 9) In Leukocyte Typing VI, Kishimoto, T., ed., Garland Publishing Inc., 1997, in the press.