

# Monoclonal Antibody CD27

PN IM2034 – Purified – Freeze-dried – 0.2 mg – Clone 1A4CD27

For Research Use Only. Not for use in diagnostic procedures.

## SPECIFICITY

The CD27 molecule is a transmembrane disulfide-linked homodimer which belongs to tumor necrosis factor receptor (TNFR) / nerve growth factor receptor (NGFR) family (1, 2).

The molecular weight of the recognized antigen is 55 kDa / 120 kDa under reducing / non reducing conditions respectively (1).

The CD27 glycoprotein is found on medullary thymocytes, peripheral T cells, subset of mature B cells and NK cells (3, 4). On T cells, CD27 is preferentially expressed on the CD45RA<sup>+</sup>CD45RO<sup>-</sup> naive subset of CD4<sup>+</sup> T lymphocytes whereas most memory T cells (CD45RA<sup>-</sup> CD45RO<sup>+</sup>) lack CD27 (2). Activation of T cells, when involving CD27 molecule, results in the upregulation of CD27 expression as cell surface embedded, and also in the release of a soluble form of CD27 (sCD27) (1, 2, 5).

*In vitro* studies have shown that Ig secretion is restricted to the CD27<sup>+</sup> B lymphocyte subset (6).

CD70 antigen, which is a member of the TNF ligand superfamily, interacts with CD27 molecule and is known to be the CD27-ligand (7).

*In vitro* studies have shown that 1A4CD27 monoclonal antibody (mAb) inhibits anti-CD2, anti-CD3, mitogens or soluble Ag-induced T cell proliferation (1). In addition, 1A4CD27 mAb inhibits T cell dependent-B cell IgG synthesis by reducing IL2 secretion (1).

1A4CD27 mAb has been assigned to the CD27 cluster of differentiation during the Vth International Workshop on Human Leukocyte Differentiation Antigens in Boston, 1993 (3, 4).

## REAGENT

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<b>Clone</b>	1A4CD27
<b>Isotype</b>	IgG1 (Kappa)
<b>Species</b>	Mouse
<b>Immunogen</b>	PHA-stimulated human T cells
<b>Hybridoma</b>	Myeloma NS1 x Balb/c spleen cells
<b>Source</b>	Ascites fluid

**Purification** Ion exchange or affinity chromatography

**Buffer** 1 mg/mL bovine serum albumin in phosphate-buffered saline

## APPLICATION

Studies of CD27 positive cells.  
Flow cytometry.

## STATEMENT OF WARNINGS

1. Specimens, samples and all material coming in contact with them should be handled as if capable of transmitting infection and disposed of with proper precautions.
2. Never pipet by mouth and avoid contact of samples with skin and mucous membranes.
3. Do not use antibody beyond the expiration date on the label.
4. Avoid microbial contamination of reagents or incorrect results might occur.
5. Use good laboratory practices when handling this reagent.

## STORAGE CONDITIONS AND STABILITY

This freeze-dried form may be stored at 2 – 8°C until the expiration date stated on the vial label.

No preservative has been added.

## REAGENT PREPARATION

Depending of usage, reconstitute with 1 mL of distilled water, with or without 0.1% sodium azide (w/v).

The reconstituted form including 0.1% sodium azide may be stored for up to one month at 2 – 8°C.

The reconstituted form without sodium azide can be stored at –20°C or less, until the expiration date stated on the vial label.

In this case, aliquotting is recommended to avoid multiple freezing / thawing cycles.

## PROCEDURE

For each application, it is recommended to establish the right range of antibody dilutions to be used for the experiment.

## SELECTED RESEARCH REFERENCES

1. Sugita, K., Torimoto, Y., Nojima, Y., Daley, J.F., Schlossman, S.F., Morimoto, C., "The 1A4 molecule (CD27) is involved in T-cell activation", 1991, J. Immunol., 147, 1477-1483.
2. Sugita, K., Hirose, T., Rothstein, D.M., Donahue, C., Schlossman, S.F., Morimoto, C., "CD27, a member of the nerve growth factor receptor family, is preferentially expressed on CD45RA<sup>+</sup> CD4 T-cell clones and involved in distinct immunoregulatory functions", 1992, J. Immunol., 149, 3208-3216.
3. Morimoto, C., "CD27 cluster report", 1995, in Leucocyte Typing V, White Cell Differentiation Antigens, Schlossman, S.F., et al., Eds., Oxford Univ. Press, p. 356-357.
4. Ritz, J., Trinchieri, G., Lanier, L.L., "NK-cell antigens: section report", 1995 in Leucocyte Typing V, White Cell Differentiation Antigens, Schlossman, S.F., et al., Eds., Oxford Univ. Press, p. 1367-1372.
5. Hintzen, R.Q., de Jong, R., Hack, C.E., Chamuleau, M., de Vries, E.F.R., ten Berge, I.J.M., Borst, J., van Lier, R.A.W., "A soluble form of the human T-cell differentiation antigen CD27 is released after triggering of the TCR / CD3 complex", 1991, J. Immunol., 147, 29-35.
6. Maurer, D., Fischer, G.F., Fae, I., Majdic, O., Stuhlmeier, K., von Jeney, N., Holter, W., Knapp, W., "IgM and IgG but not cytokine secretion is restricted to the CD27<sup>+</sup> B lymphocyte subset", 1992, J. Immunol., 148, 3700-3705.
7. Bowman, M.R., Crimmins, M.A.V., Yetz-Adalpe, J., Kriz, R., Kelleher, K., Herrmann S., "The cloning of CD70 and its identification as the ligand for CD27", 1994, J. Immunol., 152, 1756-1761

## PRODUCT AVAILABILITY

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Immunotech, a Beckman Coulter Company  
130, avenue de Lattre de Tassigny, B.P. 177  
13276 Marseille Cedex 9, France

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