

PN IM2732 CD117-PE

(104D2D1)

**100 tests
20 µL/test**



IOTest®
Conjugated Antibodies

For Research Use Only. Not For Use In Diagnostic Procedures.

SPECIFICITY

The CD117 antigen, also known as Stem Cell Factor Receptor (SCFR), mast-cell-Kit, and steel factor receptor, is a 145 kDa transmembrane glycoprotein encoded by the c-kit proto-oncogen (1).

The CD117 molecule belongs to the class III Receptor Tyrosine Kinase (RTK) family, including CD115 (or M-CSFR: macrophage colony-stimulating factor receptor), CD140a and CD140b (or PDGFRs: low platelets derived growth factor receptor), and CD135 (or FLT3/FLK2: FMS-Like Tyrosine Kinase 3/Fetal Liver Kinase 2). The extracellular domain of the CD117 molecule consists of five immunoglobulin-super family (IgSF) domains (four C2-set and one V-set). The cytoplasmic region contains a tyrosine kinase domain split by a 77 amino acid insert (1).

Ligand binding induces formation of receptor homodimers, activation of tyrosine kinase and phosphorylation of several intracellular targets including autophosphorylation (1).

Among the hematopoietic system, CD117 is expressed in about half of the CD34⁺ precursors including progenitors committed to the erythroid (2), granulo-monocytic, and megakaryocytic cell lineages (3, 4). Although CD117 is primarily a marker for non-lymphoid progenitor, it has been reported to be detected on early lymphoid progenitor (3, 5). CD117 expression has been found on a small subset of resting NK cell (CD56 bright), and about 30% of immature CD3⁻ CD4⁻ CD8⁻ thymocytes (4). CD117 is also expressed on mast cells (3, 4). CD117 is also detected on non-hematopoietic cells such as reproductive system, melanocytes and embryonic brain (3).

As its expression occurs specifically during the early stage of hematopoiesis, CD117 may be a marker for acute leukemia, especially of the myeloid lineage (1, 4, 6-8). Small proportion of T-acute leukemia (T-ALL) has been reported as CD117 positive, whereas CD117 expression on B-cell-precursor-ALL is rare (1, 4). Studies have shown that CD117 may be involved in mastocytosis (4, 9).

The 104D2D1 monoclonal antibody has been assigned to the CD117 cluster of differentiation during the 6th International Workshop on Human Leucocytes Differentiation Antigen held in Kobe, Japan, in 1996 (WS Code: C-30, Section C) (3).

REAGENT

Clone 104D2D1
Isotype IgG1
Immunogen Moln-1 Cell Line
Hybridoma SP2/O x Balb/c
Source Mouse
Purification Ion exchange or affinity chromatography
Conjugation R-phycoerythrin (PE) is conjugated at 0.5 - 1.5 moles of PE per mole of Ig.
Excitation wavelength: 488 nm
Maximum emission wavelength: 575 nm
Main emission color: Orange-red
Buffer 2 mg/mL bovine serum albumin in phosphate-buffered saline containing 0.1% sodium azide.

APPLICATION

Flow cytometry
Studies of CD117 expression during early stages of hematopoiesis.
Studies of hematopoietic precursors and / or progenitors.
Immunophenotyping of acute leukemia (1, 4, 6-8).
Studies of mast cells (4, 9).

STATEMENT OF WARNINGS

1. This reagent contains 0.1% sodium azide. Sodium azide under acid conditions yields hydrazoic acid, an extremely toxic compound. Azide compounds should be flushed with running water while being discarded. These precautions are recommended to avoid deposits in metal piping in which explosive conditions can develop. If skin or eye contact occurs, wash excessively with water.
2. 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.
3. Never pipet by mouth and avoid contact of samples with skin and mucous membranes.
4. Do not use antibody beyond the expiration date on the label.
5. Do not expose reagents to strong light during storage or incubation.
6. Avoid microbial contamination of reagents or incorrect results might occur.

STORAGE CONDITIONS AND STABILITY

Each reagent is stable up to the expiration date when stored at 2 - 8°C. Do not freeze. Minimize exposure to light.

REAGENT PREPARATION

No reconstitution is necessary. This monoclonal antibody may be used directly from the vial. Bring reagent to 20 - 25°C prior to use.

PROCEDURE

This reagent is designed for flow cytometry.

Assay volume: 20 µL per 5 x 10⁵ cells in one test, or per 100 µL whole blood.

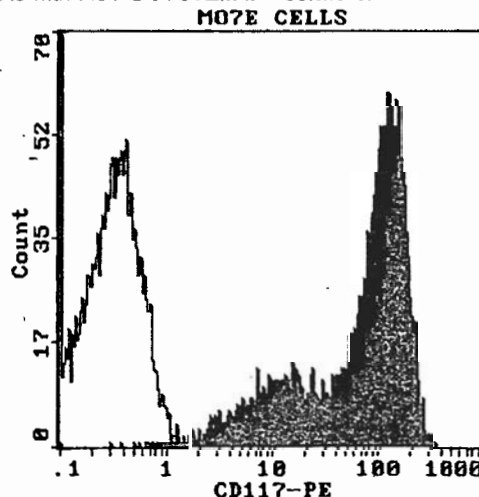
A wash is required to yield optimal results.

EXAMPLE DATA

The histograms below are monoparametric representations (Count versus Fluorescence Intensity) of MO7E cell line. Staining is with CD117-PE monoclonal antibody (PN IM2732). The isotypic control labeling (PN IM0670) is shown in light.

Figure 1:

Acquisition is with a COULTER® EPICS® XL™ flow cytometer. Analysis is with the XL SYSTEM II™ software.



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PARTNERS IN CELL ANALYSIS



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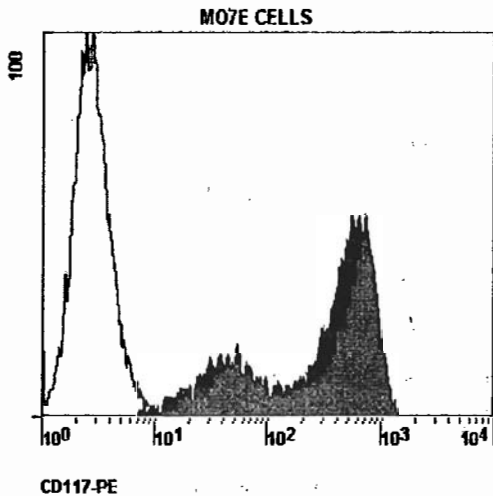
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Figure 2:

Acquisition is with a Becton Dickinson FACScan™ flow cytometer equipped with LYSYS II™ software. Analysis is with EXPO™ v2.0 Analysis software (Coulter PN 6605433).



SELECTED RESEARCH REFERENCES

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