IOTest® CD243 (P-glycoprotein)-PE
PN IM2370U – 2 mL Liquid – 20 µL / test* – Clone UIC2

Analyte Specific Reagent.
Analytical and performance characteristics are not established.

SPECIFICITY
The CD243 antigen, also known as P-glycoprotein (P-gp), is the 170-180 kDa multidrug resistance (MDR-1) gene product. It is a transmembrane protein belonging to the ATP binding cassette (ABC) transporter superfamily. P-gp is responsible for an ATP-dependent drug efflux of structurally diverse lipophilic substances including many anticancer chemotherapy agents. The molecule is comprised of two homologous halves connected by a linker peptide of approximately 75 amino acids. Each half spans the plasma membrane six times forming a drug-binding pore (1-3).

The CD243 antigen is mainly expressed in specialized epithelial cells with secretory or excretory functions. In the liver, CD243 is found on the biliary surface of hepatocytes and small biliary ductules, in the pancreas, on the laminal surface of the epithelial cells of small ductules and, in the kidney, on the brush border of the proximal tubules (4). Additional sites of expression include the brush border of the proximal tubules (4).

Additional sites of expression include the small ductules and, in the kidney, on the laminal surface of the epithelial cells of the brain (5) as well as in the adrenal glands. Dye efflux studies have shown that in normal human peripheral blood lymphocytes, CD243 is expressed in the majority of CD56* NK cells, CD8* T cells and CD20* B cells but in less than one half of CD4* T cells. In contrast, no P-gp efflux was detectable in CD14* monocytes (6). In normal bone marrow, CD243 antigen is detected in CD34+ hematopoietic stem cells (7).

The UIC2 monoclonal antibody (mAb) is a conformation-sensitive antibody that preferentially recognizes P-gp in the process of transporting substrate and that inhibits the conformational changes detectable by structurally diverse lipophilic substances including many anticancer chemotherapy agents. The molecule is comprised of two homologous halves connected by a linker peptide of approximately 75 amino acids. Each half spans the plasma membrane six times forming a drug-binding pore (1-3).

The UIC2 monoclonal antibody (mAb) is a conformation-sensitive antibody that preferentially recognizes P-gp in the process of transporting substrate and that inhibits the P-gp activity (8-12).

The UIC2 mAb has been assigned to the CD243 cluster of designation during the 7th International Workshop on Human Leucocytes Differentiation Antigen (HLDA) in Harrogate, United Kingdom, in 2000 (13).

REAGENT
IOTest CD243-PE Conjugated Antibody
PN IM2370U – 2 mL Liquid – 20 µL / test*.
Clone UIC2
Isotype IgG2a, mouse
Hybridoma P3-X63-Ag.8 x Balb/c spleen cells
Immunogen Balb/c 3T3-1000 cells (human MDR1 CDNA transfected Balb/c 3T3 fibroblasts)
Source Ascites fluid
Purification Ion exchange or affinity chromatography

Conjugation R-phycocerythin (PE) is conjugated at 0.5 – 1.5 moles of PE per mole of Ig.
Fluorescence PE (orange-red) Excites at 485 – 580 nm Emits at 568 – 590 nm

REAGENT CONTENTS
This reagent is provided in phosphate-buffered saline, with 0.1% sodium azide (NaN₃) as preservative, and 2.0 mg / mL bovine serum albumin (BSA).

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 could occur. If skin or eye contact occurs, wash excessively with water.
2. Do not use antibody beyond the expiration date on the label.
3. Samples and all material coming in contact with them should be handled as if capable of transmitting infection and disposed of with proper precautions.
4. Never pipet by mouth and avoid contact of samples with skin and mucous membranes.
5. Minimize exposure of reagent to light during storage or incubation.
6. Avoid microbial contamination of reagents or incorrect results might occur.
7. Use good laboratory practices when handling this reagent.

STORAGE CONDITIONS AND STABILITY
This reagent is stable up to the expiration date when stored at 2 – 8°C. Do not freeze.

EVIDENCE OF DETERIORATION
During storage or incubation, any change in the physical appearance of this PE-labeled reagent (clear colorless to yellow/gray) or any major variation in values obtained for control samples may indicate deterioration and the reagent should not be used.

REAGENT PREPARATION
No preparation is necessary. This monoclonal antibody may be used directly from the vial. Bring reagent to 18 – 25°C prior to use.

SELECTED RESEARCH REFERENCES

(*): 20 µL is the quantity of product sufficient to stain 5 x 10⁶ cells in a standard immunofluorescence assay


PRODUCT AVAILABILITY
IOTest CD243-PE Conjugated Antibody
PN IM2370U – 2 mL Liquid – 20 µL / test*.

PE is licensed under patent 4,520,110.

For additional information in the USA, call 800-526-7694.
Outside the USA, contact your local Beckman Coulter representative.

www.beckmancoulter.com

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(*) 20 µL is the quantity of product sufficient to stain
5 x 10^5 cells in a standard immunofluorescence assay