Human ABCG2 PE-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 5D3

Catalog Number: FAB995P

100 TESTS

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human ABCG2 in flow cytometry and immunocytochemistry.
Source	Monoclonal Mouse IgG_{2B} Clone # 5D3
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	3T3 cells transduced with human ABCG2
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

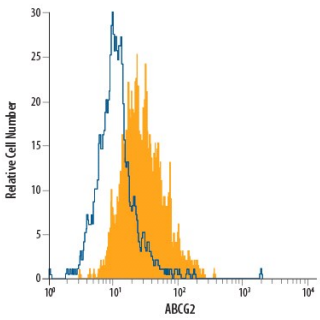
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	10 µL/10^6 cells	See Below

DATA

Flow Cytometry



Detection of ABCG2 in MCF-7 Human Cell Line by Flow Cytometry. MCF-7 human breast cancer cell line was stained with Mouse Anti-Human ABCG2 PE-conjugated Monoclonal Antibody (Catalog # FAB995P, filled histogram) or isotype control antibody (Catalog # IC0041P, open histogram). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Protect from light. Do not freeze.** ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Hematopoietic stem cells are known to express a membrane transporter molecule, known as P-glycoprotein (Pgp), that is encoded by the multidrug resistance gene 1 (MDR1) (1, 2). Expression of Pgp appears to confer a proliferative advantage to stem cells through its anti-apoptotic effects (3, 4). An additional transporter molecule known as ABCG2 (ATP-binding cassette gene 2) or Bcrp1 (Breast cancer resistance protein 1), first identified in a breast cancer cell line (5), is expressed on stem cells (6). ABCG2 belongs to a family of molecules that span the cell membrane six times and can exist as either homo or hetero dimers linked by a short intracellular flexible linker region that plays an important role in the efflux of a wide range of substrates (7, 8). Although these transporter molecules have initially been thought to play a role in drug resistance, they have been found to have utility in better characterizing primitive stem cells. For example, the “side-population” of hematopoietic stem cells, characterized by their inability to retain high levels of the intracellular staining dyes Hoechst 33342 and Rhodamine 123, has been found to express high levels of ABCG2. Of interest is the observation that ABCG2 function has been linked to the efflux of the Hoechst dye (6). Furthermore, there is now evidence that this monoclonal can be used as a cell surface marker to identify hematopoietic stem cells within the bone marrow fraction of lineage negative cells (6). The expression of ABCG2 appears greatest on $CD34^-$ cells and is downregulated with the acquisition of CD34 on the cell surface (6).

References:

1. Chaudhary, P.M. and I.B. Roninson (1991) Cell **66**:85.
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4. Johnstone, R.W. *et al.* (1999) Blood **93**:1075.
5. Doyle, L.A. *et al.* (1998) Proc. Natl. Acad. Sci. USA **95**:15665.
6. Zhou, S. *et al.* (2001) Nat. Medicine **7**:1028.
7. Hrycyna, C.A. *et al.* (1998) Biochem. **37**:13660.
8. Bunting, K.D. (2002) Stem Cells **20**:11.

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USA & CANADA Tel: (800) 343-7475 **EUROPE** Tel: +44 (0)1235 529449 **CHINA** Tel: +86 (21) 52380373