Product Specification Sheet

ATP Binding Cassette subfamily G, member 2 (ABCG2) Antibodies

□ Cat. # ABCG22-M Mouse monoclonal Anti-Human ABCG2 IgG # 2 (aff pure) **SIZE**: 100 ug

The ATP binding cassette (ABC) superfamily of membrane transporters is one of the largest protein classes known, and counts for numerous proteins involved in trafficking of biological molecules across membranes, host-defense mechanism to xenobiotics. The first known members were P-glycoprotein (P-gp) and multidrug resistant protein (MRP), cause multidrug resistance when transfected into drug-sensitive cells. In addition, increasing numbers of ABC proteins have recently been identified. The human ABCG1 (ABC, subfamily G, member 1) gene encodes a member of ABC superfamily that mediates the ATP-dependent translocation of variety of amphiphilic and lipophilic molecules. ABCG2 has been identified as a candidate protein responsible for cancer multidrug resistance, the overexpression of ABCG2 was found in several drug-selective cell lines. Search made of EST databases with BLAST program led to identification of several mouse and rat sequences that had high homology to ABCG2 but that appeared to encode a unique gene. ABCG3 is the most closely related to ABCG2 with 54% amino acid identity overall. The gene, ABCG4, produces several transcripts that differ at the 5' end and encode proteins of various lengths, the ABCG4 protein is closely related to the Drosophila's white and human ABCG1 genes, and belongs to the ABCG subfamily which are involved in cholesterol transport. ABCG5 and ABCG8 are members of the G subfamily of ABC transporters, which are predicted to contain a single magnesium-dependent ATP catalytic domain N-terminal to six transmembrane segments, mutations in either of them cause an identical phenotype which is consistent with these two gene products functioning as heterodimer. ABCG6 and ABCG7 exist in Dictyostelium species of eukaryotes.
Since the above proteins were able to transport substances across cellular membranes and against concentration gradient they require an input of energy, which requires the hydrolysis of ATP, directly or indirectly.

ABCG2 protein has 655aa in human (Chr 4) and 657 in mouse, is an integral membrane protein, which plays a major role in multidrug resistance phenotype of malignant cells, when overexpresssed. It appears in three different forms, containing Arg, Gly or Thr at aa position 482, these variants posses significant differences in their cross-resistance and drug transport patterns. The human ABCG2 protein shows 54% sequence homology with mouse ABCG3 protein.

Source of Antigen and Antibodies

Antigen	Recombinant human ABCG2 protein
Ab Host/type	Mouse, monoclonal (Ig2b)
Ab Format	Aff pure IgG (**cat # ABCG22-M**)

Recommended Usage

Western Blotting not recommended.

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: We recommend the use of aff pure IgG at 2-10 ug/ml using 4% paraformaldehyde fixed JAR or other cells..

Flow cytometry: recommended concn is ~1 ug/million cells of NIH3T3 or other cells expressing ABCG2.

Specificity & Cross-reactivity

This antibody reacts with human ABCG2 and other ABCGs (ABCG1, ABCG3-8 etc). Antibody cross-reactivity in various species has not been studied.

General References: Csilla Ozvegy et al (2002) JBC, Vol. 277, No: 50, 47980-47980; Lyn Mickley et al (2001) Mammalian Genome 12, 86-88; L. Austin Doyle (1998) PNAS Vol. 95, 15665-15670.

*This product is for In vitro research use only.

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

□ 100 ug/100ul □ 50 ug/50 ul
□ solution □ lyophilized powder
Buffer: 100 mM Tris, pH 7.5, 0.2% BSA
contains 0.05% sodium azide
Reconstitute powder in the original vol. of water

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.

Shipping: 4oC for solutions and room temp for powder.

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Antibodies for ABCG1 to ABCG8.

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ABCG22-M 130718A

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