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ABCG2 (BCRP) Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1490c

Product Information

Application	WB, IF, FC, IHC-P, E
Primary Accession	Q9UNQ0
Reactivity	Human
Predicted	Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB13782
Calculated MW	72314
Antigen Region	305-335

Additional Information

Gene ID	9429
Other Names	ATP-binding cassette sub-family G member 2, Breast cancer resistance protein, CDw338, Mitoxantrone resistance-associated protein, Placenta-specific ATP-binding cassette transporter, Urate exporter, CD338, ABCG2, ABCP, BCRP, BCRP1, MXR
Target/Specificity	This ABCG2 (BCRP) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 305-335 amino acids from the Central region of human ABCG2 (BCRP).
Dilution	WB~~1:1000 IF~~1:10~50 FC~~1:10~50 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	ABCG2 (BCRP) Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ABCG2 (HGNC:74)

Function	Broad substrate specificity ATP-dependent transporter of the ATP-binding cassette (ABC) family that actively extrudes a wide variety of physiological compounds, dietary toxins and xenobiotics from cells (PubMed:11306452, PubMed:12958161, PubMed:19506252, PubMed:20705604, PubMed:28554189, PubMed:30405239, PubMed:31003562). Involved in porphyrin homeostasis, mediating the export of protoporphyrin IX (PPIX) from both mitochondria to cytosol and cytosol to extracellular space, it also functions in the cellular export of heme (PubMed:20705604, PubMed:23189181). Also mediates the efflux of sphingosine-1-P from cells (PubMed:20110355). Acts as a urate exporter functioning in both renal and extrarenal urate excretion (PubMed:19506252, PubMed:20368174, PubMed:22132962, PubMed:31003562, PubMed:36749388). In kidney, it also functions as a physiological exporter of the uremic toxin indoxyl sulfate (By similarity). Also involved in the excretion of steroids like estrone 3-sulfate/E1S, 3beta-sulfooxy-androst-5-en-17-one/DHEAS, and other sulfate conjugates (PubMed:12682043, PubMed:28554189, PubMed:30405239). Mediates the secretion of the vitamins riboflavin and biotin into milk (By similarity). Involved in the excretion of the riboflavin-derived compound lumichrome into the intestinal lumen and in its secretion into milk (PubMed:39337371). Extrudes pheophorbide a, a phototoxic porphyrin catabolite of chlorophyll, reducing its bioavailability (By similarity). Plays an important role in the exclusion of xenobiotics from the brain (Probable). It confers to cells a resistance to multiple drugs and other xenobiotics including mitoxantrone, pheophorbide, camptothecin, methotrexate, azidothymidine, and the anthracyclines daunorubicin and doxorubicin, through the control of their efflux (PubMed:11306452, PubMed:12477054, PubMed:15670731, PubMed:18056989, PubMed:31254042). In placenta, it limits the penetration of drugs from the maternal plasma into the fetus (By similarity). May play a role in early stem cell self-renewal by blocking differentiation (By similarity). In inflammatory macrophages, exports itaconate from the cytosol to the extracellular compartment and limits the activation of TFEB-dependent lysosome biogenesis involved in antibacterial innate immune response (PubMed:38181789). Operates at apical membranes of polarized cells such as hepatocytes and intestinal epithelial cells, where it may contribute to the efflux of conjugated substrates from intestine and liver into the intestinal lumen as well as their enterohepatic recycling. Can transport estrogen and androgen substrates conjugated with glucuronate or sulfate at C-3, C-16 and C-17 positions. Among androgen glucuronates, appears to selectively transport dihydrotestosterone-17-glucuronate while displaying no transporter activity toward testosterone, androsterone and etiocholanolone glucuronates (PubMed:29175180, PubMed:30959153, PubMed:39993711).
Cellular Location	Cell membrane; Multi-pass membrane protein. Apical cell membrane; Multi-pass membrane protein. Mitochondrion membrane; Multi-pass membrane protein. Note=Enriched in membrane lipid rafts
Tissue Location	Highly expressed in placenta (PubMed:9850061). Low expression in small intestine, liver and colon (PubMed:9861027) Expressed in brain (at protein level) (PubMed:12958161)

Background

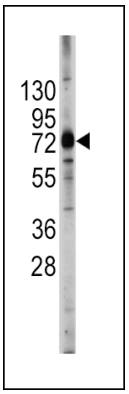
ABCG2 is a membrane-associated protein included in the superfamily of ATP-binding cassette (ABC) transporters. ABC proteins transport various molecules across extra- and intra-cellular membranes. ABC genes are divided into seven distinct subfamilies (ABC1, MDR/TAP, MRP, ALD, OABP, GCN20, White). This protein is a member of the White subfamily. Alternatively referred to as a breast cancer resistance protein, this protein functions as a xenobiotic transporter which may play a major role in multi-drug resistance. It likely serves as a cellular defense mechanism in response to mitoxantrone and anthracycline exposure. Significant expression of this protein has been observed in the placenta, which may suggest a potential role

for this molecule in placenta tissue.

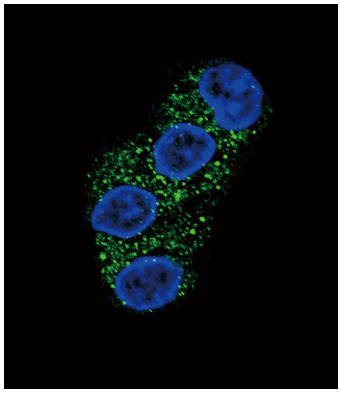
References

Xie,Y., J. Biol. Chem. 283 (6), 3349-3356 (2008) Tamura,A., Drug Metab. Pharmacokinet. 22 (6), 428-440 (2007)

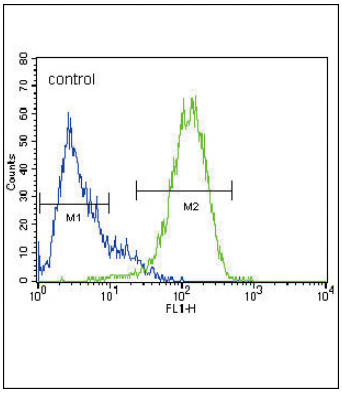
Images



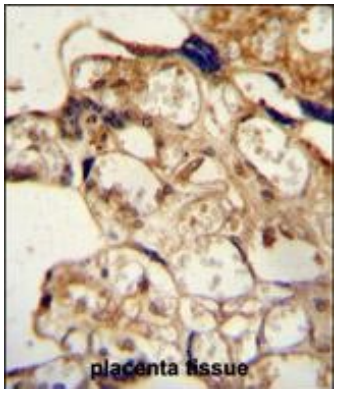
Western blot analysis of ABCG2 Antibody (Center) in 293 cell line lysates (35ug/lane). ABCG2(arrow) was detected using the purified Pab.



Confocal immunofluorescent analysis of ABCG2 (BCRP) Antibody (Center)(Cat#AP1490c) with HepG2 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).



ABCG2 (BCRP) Antibody (Center) (Cat. #AP1490c) flow cytometric analysis of HepG2 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



ABCG2 (BCRP) Antibody (Center) (Cat. #AP1490c)immunohistochemistry analysis in formalin fixed and paraffin embedded human placenta tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of ABCG2 (BCRP) Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.

Citations

- The clinical significance of FRAT1 and ABCG2 expression in pancreatic ductal adenocarcinoma.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.