



Product Information

Anti-Breast Cancer Resistance Protein

Developed in Rabbit, Affinity Isolated Antibody

Product Number **B 7185**

Product Description

Anti-Breast Cancer Resistance Protein (BCRP) is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acid residues 150-167 of human breast cancer resistance protein (BCRP) with C-terminal added cysteine, conjugated to KLH. The corresponding sequence differs by two and four residues in pig and mouse, respectively. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Breast Cancer Resistance Protein recognizes human and mouse BCRP. Applications include immunoblotting (~70 kDa) and immunohistochemistry. In some preparations doublet bands are detected. Detection of the BCRP band(s) by immunoblotting is specifically inhibited with the immunizing peptide.

Breast Cancer Resistance Protein (BCRP), also designated ABCG2, ABCP, Placenta specific ATP-binding transporter and mitoxantrone-resistance protein (MXR), is a member of the ABCG subfamily of the large ATP-Binding Cassette (ABC) transporter family of transmembrane proteins. These integral glycoproteins function as export 'pumps' and extrude a broad range of compounds from the cell. MDR1 (Pgp1), the Lung Resistance-related Protein (LRP, MVP), and MRP1-3 are involved in the simultaneous expression of cellular resistance to a variety of structurally and functionally unrelated drugs (Multidrug Resistance).^{1,2} This phenomenon is considered a major obstacle to successful chemotherapy.

BCRP is a half-transporter, with a single ATP binding cassette and transmembrane region. BCRP is normally expressed in human placental syncytiotrophoblasts, mammary ducts and lobules, endothelial cells, and stem cells of different tissues. Lower levels are detected in adult liver, small intestine, colon, stomach, prostate, ovary, and choroids plexus.¹⁻⁵ Localization pattern appears to vary in different species. Up regulation of BCRP expression may be found *in vivo* and *in vitro* in both drug treated and untreated tumors of different types. Breast Cancer Resistance Protein is mainly localized to the cell plasma membrane as homodimers and actively extrudes various unrelated compounds from cells. Breast Cancer Resistance Protein transports various xenobiotics to the extracellular space through a process energized by ATP hydrolysis. In addition to its role in protecting cells and tissues against xenobiotics especially in the intestine, liver, placenta and the blood-brain barrier, BCRP appears to be involved in hypoxic defense mechanisms and the protection and regulation of stem cells.^{7,8} It has been suggested that there is a role for BCRP in cellular folate homeostasis *in vitro*.⁹

Reagent

Anti-Breast Cancer Resistance Protein is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: approx. 0.4 mg/ml

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

By immunoblotting, a working antibody concentration of 2.5-5 µg/ml is recommended using a whole extract of human term placenta or mouse kidney and a chemiluminescent detection reagent.

By immunohistochemistry, a working antibody concentration of 20-40 µg/ml is recommended by indirect immunoperoxidase staining of syncytiotrophoblasts in heat-retrieved formalin-fixed, paraffin-embedded human term placenta sections.

Note: In order to obtain best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration test.

References

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