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TAP1 Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP6252a

Specification

TAP1 Antibody (C-term) Blocking Peptide - Product Information

Primary Accession	Q03518
Other Accession	Q96CP4

TAP1 Antibody (C-term) Blocking Peptide - Additional Information

Gene ID 6890

Other Names
Antigen peptide transporter 1, APT1, ATP-binding cassette sub-family B member 2, Peptide supply factor 1, Peptide transporter PSF1, PSF-1, Peptide transporter TAP1, Peptide transporter involved in antigen processing 1, Really interesting new gene 4 protein, TAP1, ABCB2, PSF1, RING4, Y3

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP6252a was selected from the C-term region of human TAP1 . A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

TAP1 Antibody (C-term) Blocking Peptide - Protein Information

Name TAP1 {ECO:0000303|PubMed:10605026, ECO:0000312|HGNC:HGNC:43}

Function
ABC transporter associated with antigen processing. In complex with TAP2 mediates unidirectional translocation of peptide antigens from cytosol to endoplasmic reticulum (ER) for loading onto MHC class I (MHCI) molecules (PubMed:25656091, PubMed:25377891). Uses the chemical energy of ATP to export peptides against the concentration gradient (PubMed:25377891). During the transport cycle alternates between 'inward-facing' state with peptide binding site facing the cytosol to 'outward-facing' state with peptide binding site facing the ER lumen. Peptide antigen binding to ATP-loaded TAP1-TAP2 induces a switch to

hydrolysis-competent 'outward-facing' conformation ready for peptide loading onto nascent MHCI molecules. Subsequently ATP hydrolysis resets the transporter to the 'inward facing' state for a new cycle (PubMed:25377891, PubMed:25656091, PubMed:11274390). Typically transports intracellular peptide antigens of 8 to 13 amino acids that arise from cytosolic proteolysis via IFNG-induced immunoproteasome. Binds peptides with free N- and C-termini, the first three and the C-terminal residues being critical. Preferentially selects peptides having a highly hydrophobic residue at position 3 and hydrophobic or charged residues at the C-terminal anchor. Proline at position 2 has the most destabilizing effect (PubMed:7500034, PubMed:9256420, PubMed:11274390). As a component of the peptide loading complex (PLC), acts as a molecular scaffold essential for peptide-MHCI assembly and antigen presentation (PubMed:26611325, PubMed:1538751, PubMed:25377891).

Cellular Location
Endoplasmic reticulum membrane; Multi-pass membrane protein. Note=The transmembrane segments seem to form a pore in the membrane

Tissue Location
Highly expressed in professional APCs monocytes and dendritic cells as well as in lymphocyte subsets T cells, B cells and NK cells.

TAP1 Antibody (C-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

TAP1 Antibody (C-term) Blocking Peptide - Images

TAP1 Antibody (C-term) Blocking Peptide - Background

TAP is an integral transmembrane protein involved in the transport of antigens from the cytoplasm to the endoplasmic reticulum for association with MHC class I molecules. It also acts as a molecular scaffold for the final stage of MHC class I folding, namely the binding of peptide. Nascent MHC class I molecules associate with TAP via tapasin. TAP is inhibited by the covalent attachment of herpes simplex virus ICP47 protein, which blocks the peptide-binding site of TAP. It is inhibited by human cytomegalovirus US6 glycoprotein, which binds to the lumenal side of the TAP complex and inhibits peptide translocation by specifically blocking ATP-binding to TAP and prevents the conformational rearrangement of TAP induced by peptide binding. TAP is also inhibited by human adenovirus E3-19K glycoprotein, which binds the TAP complex and acts as a tapasin inhibitor, preventing MHC class I/TAP association. Expression of TAP is down-regulated by human Epstein-barr virus vIL-10 protein, thereby affecting the transport of peptides into the endoplasmic reticulum and subsequent peptide loading by MHC class I molecules. TAP1 and TAP2 form a heterodimer of TAP1 and TAP2, and the peptide-binding site is shared between the cytoplasmic loops of TAP1 and TAP2. TAP, inducible by interferon gamma, belongs to the ABC transporter family, MDR subfamily.

TAP1 Antibody (C-term) Blocking Peptide - References

Lajoie, J., et al., Hum. Immunol. 64(8):823-829 (2003).Gaudet, R., et al., EMBO J. 20(17):4964-4972 (2001).Tang, J., et al., Hum. Immunol. 62(3):256-268 (2001).Hewitt, E.W., et al., EMBO J.

20(3):387-396 (2001).Bennett, E.M., et al., J. Immunol. 162(9):5049-5052 (1999).