10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

TAP1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6252a

Product Information

Application	IHC-P, WB, E
Primary Accession	Q03518
Other Accession	Q96CP4
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB1815-1816
Calculated MW	80965
Antigen Region	765-794

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	This TAP1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 765-794 amino acids from the C-terminal region of human TAP1.
Dilution	IHC-P~~1:100~500 WB~~1:2000 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	TAP1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

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:25377891, PubMed:25656091). 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:11274390, PubMed:25377891, PubMed:25656091). 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:11274390, PubMed:7500034, PubMed:9256420). As a component of the peptide loading complex (PLC), acts as a molecular scaffold essential for peptide-MHCI assembly and antigen presentation (PubMed:1538751, PubMed:25377891, PubMed:26611325).
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.

Background

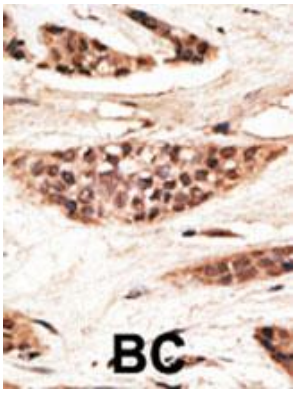
TAP is an integral transmembrane protein involved in the transport of antigens from the cytoplasm to the endoplasmic reticulum for association with MHC class I molecules. It also acts as a molecular scaffold for the final stage of MHC class I folding, namely the binding of peptide. Nascent MHC class 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.

References

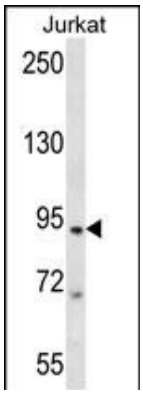
Lajoie, J., et al., Hum. Immunol. 64(8):823-829 (2003).
Gaudet, R., et al., EMBO J. 20(17):4964-4972 (2001).
Tang, J., et al., Hum. Immunol. 62(3):256-268 (2001).
Hewitt, E.W., et al., EMBO J. 20(3):387-396 (2001).
Bennett, E.M., et al., J. Immunol. 162(9):5049-5052 (1999).

Images

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was



peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



TAP1 Antibody (I795) (Cat. #AP6252a) western blot analysis in Jurkat cell line lysates (35ug/lane).This demonstrates the TAP1 antibody detected the TAP1 protein (arrow).