HLA-DQA1 cDNA Clone – Major Histocompatibility Complex, Class II, Dq Alpha 1 (Human)

PRODUCT OVERVIEW

Product Name	HLA-DQA1, cDNA Clone
Full Product Name	HLA-DQA1 cDNA Clone
Product Gene Name	HLA-DQA1 cdna clone
Sequence	atgatcctaa acaaagctct gatgctgggg gcccttgccc tgaccaccgt gatgagcccc tgtggaggtg aagacattgt ggctgaccac gtcgcctctt atggtgtaaa cttgtaccag tcttacggtc cctctggcca gtacacccat gaatttgatg gagatgagca gttctacgtg gacctgggga ggaaggagac tgtctggtgt ttgcctgttc tcagacaatt tagatttgac ccgcaatttg cactgacaaa catcgctgtc ctaaaacata acttgaacag tctgattaaa cgctccaact ctaccgctgc taccaatgag gttcctgagg tcacagtgtt ttccaagtct cccgtgacac tgggtcagcc caacatcctc atctgtcttg tggacaacat ctttcctcct gtggtcaaca tcacatggct gagcaatggg cactcagtca cagaaggtgt ttctgagacc agcttcctct ccaagagtga tcattccttc ttcaagatca gttacctcac cctcctccct tctgctgagg agagttatga ctgcaaggtg gagcactggg gcctggacaa gcctcttctg aaacactggg agcctgagat tccagcccct atgtcagagc tcacagagac tgtggtctgc gccctgggat tgtctgtggg cctcgtgggc attgtggtgg gcactgtctt catcatccga ggcctgcgtt cagttggtgc ttccagacac caagggccct tgtga
Molecular Weight	27,805 Da
OMIM	146880
Vector	pENTR223.1 or pUC
Clone Sequence Report	Provided with product shipment
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for HLA-DQA1 cdna clone	MBS1275922 is a cDNA clone targeting HLA-DQA1.
Other Notes	Small volumes of HLA-DQA1 cdna clone vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for HLA-DQA1. It may not necessarily be applicable to this product.

NCBI GI #	14250310
NCBI GeneID	3117
NCBI Accession #	BC008585
UniProt Secondary Accession #	O19630; O19706; P01907; P01908; P04225; P04226; P05536; P79553; Q06751; Q29876; Q29994
UniProt Related Accession #	P01909
NCBI Official Full Name	Homo sapiens major histocompatibility complex, class II, DQ alpha 1, mRNA
NCBI Official Synonym Full Names	major histocompatibility complex, class II, DQ alpha 1
NCBI Official Symbol	HLA-DQA1
NCBI Official Synonym Symbols	DQ-A1; CELIAC1; HLA-DQA
UniProt Protein Name	HLA class II histocompatibility antigen, DQ alpha 1 chain
UniProt Synonym Protein Names	DC-1 alpha chain; DC-alpha; HLA-DCA; MHC class II DQA1
Protein Family	HLA class II histocompatibility antigen

UniProt Gene Name	HLA-DQA1
UniProt Entry Name	DQA1_HUMAN
NCBI Protein Information	HLA class II histocompatibility antigen, DQ alpha 1 chain
NCBI Summary for HLA-DQA1	HLA-DQA1 belongs to the HLA class II alpha chain paralogues. The class II molecule is a heterodimer consisting of an alpha (DQA) and a beta chain (DQB), both anchored in the membrane. It plays a central role in the immune system by presenting peptides derived from extracellular proteins. Class II molecules are expressed in antigen presenting cells (APC: B Lymphocytes, dendritic cells, macrophages). The alpha chain is approximately 33-35 kDa. It is encoded by 5 exons; exon 1 encodes the leader peptide, exons 2 and 3 encode the two extracellular domains, and exon 4 encodes the transmembrane domain and the cytoplasmic tail. Within the DQ molecule both the alpha chain and the beta chain contain the polymorphisms specifying the peptide binding specificities, resulting in up to four different molecules. Typing for these polymorphisms is routinely done for bone marrow transplantation. [provided by RefSeq, Jul 2008]
UniProt Comments for HLA-DQA1	Binds peptides derived from antigens that access the endocytic route of antigen presenting cells (APC) and presents them on the cell surface for recognition by the CD4 T-cells. The peptide binding cleft accommodates peptides of 10-30 residues. The peptides presented by MHC class II molecules are generated mostly by degradation of proteins that access the endocytic route, where they are processed by lysosomal proteases and other hydrolases. Exogenous antigens that have been endocytosed by the APC are thus readily available for presentation via MHC II molecules, and for this reason this antigen presentation pathway is usually referred to as exogenous. As membrane proteins on their way to degradation in lysosomes as part of their normal turn-over are also contained in the endosomal/lysosomal compartments, exogenous antigens must compete with those derived from endogenous components. Autophagy is also a source of endogenous peptides, autophagosomes constitutively fuse with MHC class II loading compartments. In addition to APCs, other cells of the gastrointestinal tract, such as epithelial cells, express MHC class II molecules and CD74 and act as APCs, which is an unusual trait of the GI tract. To produce a MHC class II molecule that presents an antigen, three MHC class II molecules (heterodimers of an alpha and a beta chain) associate with a CD74 trimer in the ER to form a heterononamer. Soon after the entry of this complex into the endosomal/lysosomal system where antigen processing occurs, CD74 undergoes a sequential degradation by various proteases, including CTSS and CTSL, leaving a small fragment termed CLIP (class-II-associated invariant chain peptide). The removal of CLIP is facilitated by HLA-DM via direct binding to the alpha-beta-CLIP complex so that CLIP is released. HLA-DM stabilizes MHC class II molecules until primary high affinity antigenic peptides are bound. The MHC II molecule bound to a peptide is then transported to the cell membrane surface. In B-cells, the interaction between HLA-DM and MHC class II molecules is regulated by HLA-DO. Primary dendritic cells (DCs) also to express HLA-DO. Lysosomal microenvironment has been implicated in the regulation of antigen loading into MHC II molecules, increased acidification produces increased proteolysis and efficient peptide loading.
Research Articles on HLA-DQA1	**1.** We found association of three variants in the region harboring genes encoding the class II human leukocyte antigens (HLAs): both located between HLA-DQA1 and HLA-DRB1
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