**GENERAL DESCRIPTION**

The human leucocyte antigen (HLA) system, originally discovered as the result of a transfusion reaction, is now known to play a crucial role in many areas of clinical medicine.

The main function of the HLA-DP, DQ and DR molecules is to present antigenic peptides, mostly of exogenous nature, to CD4+ T-cells. HLA molecules are also known to be associated with a variety of autoimmune, non-autoimmune and infectious diseases and to restrict the antibody response to certain antigens and vaccines.

The HLA molecules are encoded by a cluster of tightly linked genes located on the short arm of chromosome 6. Based on some of the structural and functional characteristics of the genes, the region has been divided into three: HLA class I, Class II and class III regions.

The Class II HLA-DP, DQ and DR, A and B genes encode a heterodimer formed by two non-covalently associated α and β chains of approximately 34 and 28 kDa respectively. The expressed α and β chains consist of four domains: two extracellular, two intracellular one transmembrane and one cytoplasmic.

HLA-DP, DQ and DR molecules are constitutively expressed on antigen-presenting cells such as B lymphocytes, monocytes and dendritic cells but can also be detected on cytotoxic/suppressor T lymphocytes and activated granulocytes. It is uncertain whether HLA-DP, DQ and DR antigens are also expressed on activated platelets. HLA class II expression can also be induced on cells and tissues such as fibroblasts and endothelial cells as a result of activation and/or by certain cytokines such as γ-interferon, tumor necrosis factor and interferon-10.

The antigen has been found on the cell surface of leukaemic blasts from cases of B-cell acute lymphoblastic leukaemia (ALL), T-cell pre-ALL, acute myeloid leukaemia (AML) except AML-M3, and chronic B and T cell leukaemia, chronic myeloid leukaemia (CML) in blast crisis and lymphomas of B and T cell type. HLA-DP, DQ, DR antigen is normally not present on non-haematopoietic tumors and multiple myeloma.

**REAGENTS PROVIDED**

**Product Overview:** MAb to CD:
- Mouse Monoclonal Antibody to Human HLA-DP, DQ, DR Antigen
- Clone: DR4/44
- Isotype: IgG1, kappa

**Specificity:** Anti-Human HLA-DP, DQ, DR Antigen, DR4/44, reacts with the β-chain of the αβ heterodimer of all products of the gene families DP, DQ and DR. The antibody was included in the First International Workshop and Conference on Monoclonal Antibodies to Human MHC Class II Antigens (1983) and its specificity and other characteristics were ascertained by a variety of techniques, including reactivity with isolated antigen, immunoblotting, and labelling of transfected cells. In normal peripheral blood the antibody stains B cells and monocytes but is unreactive with normal T cells and polymorphs. It will, however, stain activated T cells in peripheral blood. Anti-HLA-DP, DQ, DR Antigen does not react with erythrocytes and megakaryocytes.

**Format:** Monoclonal mouse antibody provided in liquid form as cell culture supernatant dialysed against 0.05 mol/l Tris/HCl, pH 7.2, and containing 15 mmol/l NaN3.

**Applications:** Suitable for use in IHC. Optimal antibody concentrations may vary depending on specimen and preparation method, and should be determined by each individual laboratory.

**ASSAY CHARACTERISTICS**

In normal peripheral blood DMAB5015 stains B cells, monocytes and activated T cells but is unreactive with normal T cells and polymorphs. In bone marrow, DMAB5015 does not react with erythrocytes and megakaryocytes whereas, capillary endothelial cells and some unidentified mononuclear cells are stained. Immunohistochemical analysis of malignant tissue demonstrated that Anti-HLA-DP, DQ, DR, Antigen, DR4/44 labels AML (5/5 cases), B cell ALL (3/3 cases), chronic leukaemias and lymphomas of B and T cell type (3/3 cases), 45/46 cases, and CML in myeloid blast crisis (1/1 case). The antibody does not label multiple myeloma (0/3 cases) but shows weak staining of a minority of cells in metastatic breast carcinomas (2/5 cases).
PACKAGING

Mouse IgG concentration mg/L: See label on vial
Preservative: sodium azide (NaN3)
Storage: Store at 2-8 °C. Do not use after expiration date stamped on vial. If reagents are stored under any conditions other than those specified, the conditions must be verified by the user. There are no obvious signs to indicate instability of this product. Therefore, positive and negative controls should be run simultaneously with patient specimens.

REFERENCES

2. Giacomini P et al. mAb KUL/05 identifies a denaturation-resistant determinant shared by class II MHC products DR, DQ and DP. J Immunogenet 16: 203-216 (1989).