



NHS Blood & Transplant
500 North Bristol Park
Northway
Filton
Bristol
BS34 7QH

Tel: +44 (0)117 921 7200
Fax: +44 (0)117 912 5796
Web: <http://ibgri.blood.co.uk>

Antigen	HLA class I
Clone	P-43
Product Code	9466
Immunoglobulin Class	Mouse IgG1 kappa light chain

Antigen Description and Distribution

MHC (major histocompatibility complex) class I molecules are found on every nucleated cell of the body (and thus not on red blood cells, though they are found on platelets). Class I MHC molecules bind peptides generated mainly from degradation of cytosolic proteins by the proteasome and display intracellular proteins to cytotoxic T cells. However, class I MHC can also present peptides generated from exogenous proteins, in a process known as cross-presentation. Alternatively, class I MHC itself can serve as an inhibitory ligand for natural killer cells (NKs). Reduction in the normal levels of surface class I MHC, a mechanism employed by some viruses during immune evasion or in certain tumors, will activate NK cell killing. MHC class I molecules consist of two polypeptide chains, α and β 2-microglobulin (b2m). The two chains are linked noncovalently via interaction of b2m and the α 3 domain. Only the α chain is polymorphic and encoded by a HLA gene, while the b2m subunit is not polymorphic and encoded by the Beta-2 microglobulin gene. The α 3 domain is plasma membrane-spanning and interacts with the CD8 co-receptor of T-cells. The α 1 and α 2 domains fold to make up a groove for peptides to bind. MHC class I molecules bind peptides that are 8-10 amino acid in length.

Clone

P-43 is produced from a mouse hybridoma derived from fusion of Balb/c spleen cells with X63Ag8.653 myeloma cells. P-43 was made in response to immunisation with Glanzmann's platelets (lacking IIbIIIa). P-43 was positive for all known HLA antigens using Single Antigen Beads on the Luminex platform (low affinity for HLA-C*04). P-43 was detected by the platelet immunofluorescence test (PIFT) with all panel platelets. P-43 were tested in parallel in the Monoclonal Antibody-specific Immobilisation of Platelet Antigens (MAIPA) assay. P-43 facilitated detection of HLA Class I for 3/6 panel platelet cells in the MAIPA assay.

References

1. Marsh SG, Albert ED, Bodmer WF, *et al.* (2005). "Nomenclature for factors of the HLA system, 2004". *Tissue Antigens* **65** (4): 301–69.