

**International Blood Group
Reference Laboratory**500 North Bristol Park
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Antigen	HLA-A*0201 MHC class I
Clone	OP67
Product Code	9467
Immunoglobulin Class	Mouse IgG1 kappa light chain

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and Production Unit**Tel: +44 (0)117 921 7500
Fax: +44 (0)117 912 5796Website: <http://ibgri.blood.co.uk>Email: enquiries.IBGRL@nhsbt.nhs.uk**Antigen Description and Distribution**

The major histocompatibility complex (MHC) is the most polygenic and polymorphic region in the human genome. Human leukocyte antigens (HLA) Class I include HLA-A, -B and -C loci. HLA-A are encoded by the HLA-A locus on human chromosome 6p. The HLA genes constitute a large subset of the MHC of humans. HLA-A is a component of certain MHC class I cell surface receptor glycoproteins that resides on the surface of all nucleated cells and 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. HLA-A2 is a serotype within HLA-A "A" serotype group^[1]. A2 and A*02 are almost synonymous in meaning. The serotype identifies the gene products of many HLA-A*02 alleles, including the HLA-A*02:01, gene product. A*02 is globally common and one of the most diverse antigens, A*02:01 is present in several ethnic groups and at high frequencies in these populations.

Clone

OP67 is produced from a mouse hybridoma derived from fusion of Balb/c spleen cells with X63Ag8.653 myeloma cells. OP67 was made in response to immunisation with Chymotrypsinised platelets (HLA not known).

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.