

AM33034PU-N**Monoclonal Antibody to MHC Class I Heavy Chain (Restricted expression) - Purified**

Alternate names:	HLA Class 1, MHC Class 1, Major Histocompatibility complex class I
Quantity:	0.1 mg
Concentration:	1.0 mg/ml
Background:	<p>The HLA class I gene family is composed of a group of genes whose products encode cell surface glycoproteins of MW 40–45 kDa, associated non-covalently with the beta-2-microglobulin light chain. They include the three polymorphic molecules HLA-A, -B, and -C, which are ubiquitously expressed and which are able to present intracellular peptides to cytotoxic T cells. Three additional class I genes are known, commonly referred to as non-classical or class Ib genes, all highly homologous to the other class I genes and all of which associate with beta-2-microglobulin light chain. In humans, each of the class Ib genes appears to exhibit a distinct pattern of expression in developing and adult tissues. HLA-E transcripts are distributed widely in adult tissues and have also been found in the placenta and fetal liver. In the adult, the presence of HLA-F has been shown in skin, resting T cells, and B cells, whereas its expression during development has been reported in fetal liver and at low levels in placenta and extra-placental tissues. HLA-G was originally thought to be expressed only in certain populations of placental trophoblasts, but low levels have also been found in a variety of human tissues. Recently it was shown that HLA class I expression in breast cancer cells can have a predictive value for chemotherapy response.</p>
Host / Isotype:	Mouse / IgG1
Recommended Isotype Controls:	SM10P (for use in human samples), AM03095PU-N
Clone:	HCA2
Immunogen:	Derived by fusion of SP2/0-Ag14 mouse myeloma cells with spleen cells from BALB/c mice immunized with HLA-B7 and -B40 heavy chains.
Format:	State: Liquid purified IgG fraction Buffer System: PBS Preservatives: 0.09% Sodium Azide
Applications:	ELISA. Western Blot. Immunoprecipitation. Flow Cytometry. Immunocytochemistry. Immunohistochemistry on Frozen Sections. Immunohistochemistry on Paraffin Sections (See References for Conditions). Recommended Dilutions: 1/100–1/200 for Flow Cytometry, and for Immunohistochemistry with avidin-biotinylated <i>horseradish</i> peroxidase complex (ABC) as detection reagent, and 1/100–1/1000 for Immunoblotting applications.

Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:

This Monoclonal antibody *HCA2* recognize HLA class I heavy chains. The reactivity spectrum of *HCA2* is composed of all HLA-A chains (except HLA-A24), as well as some HLA-B, HLA-C, HLA-E, HLA-F, and HLA-G chains.

The antibody *HCA2* reacts preferentially with HLA-A locus heavy chains. *HCA2* was raised against free class I heavy chains of HLA, to obtain antibodies that would still react with denatured class I antigens, as they occur in Western blotting, conventional light microscopical analysis of Formalin-Fixed, Paraffin-Embedded Sections, and Cryo-Immuno-Electron Microscopy.

HCA2 indeed retains strong reactivity with free class I heavy chains in Western blots. *HCA2* in particular reacts in a locus-specific manner by biochemical criteria.

HCA2 also produces strong reactivity in Immuno-Electron Microscopy. Its use allows the determination of tissue and subcellular distribution of class I antigens.

Species Reactivity:

Tested: Human.

Storage:

Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.

Avoid repeated freezing and thawing.

Shelf life: one year from despatch.

General Readings:

1. Stam NJ, Vroom TM, Peters PJ, Pastoors EB, Ploegh HL. HLA-A- and HLA-B-specific monoclonal antibodies reactive with free heavy chains in western blots, in formalin-fixed, paraffin-embedded tissue sections and in cryo-immuno-electron microscopy. *Int Immunol.* 1990;2(2):113-25. PubMed PMID: 2088481.
2. de Kruijf EM, van Nes JG, Sajet A, Tummers QR, Putter H, Osanto S, et al. The predictive value of HLA class I tumor cell expression and presence of intratumoral Tregs for chemotherapy in patients with early breast cancer. *Clin Cancer Res.* 2010 Feb 15;16(4):1272-80. doi: 10.1158/1078-0432.CCR-09-1844. Epub 2010 Feb 9. PubMed PMID: 20145162.
3. Hutter H, Hammer A, Blaschitz A, Hartmann M, Ebbesen P, Dohr G, et al. Expression of HLA class I molecules in human first trimester and term placenta trophoblast. *Cell Tissue Res.* 1996 Dec;286(3):439-47. PubMed PMID: 8929346.
4. Seitz C, Uchanska-Ziegler B, Zank A, Ziegler A. The monoclonal antibody HCA2 recognises a broadly shared epitope on selected classical as well as several non-classical HLA class I molecules. *Mol Immunol.* 1998 Sep;35(13):819-27. PubMed PMID: 9839550.