

# Mouse H-2Kb (MHC Class I) Antibody

Purified *in vivo* GOLD™ Functional Grade

Monoclonal Antibody

## Product Information

**Product No.:** Y100  
**Clone:** Y-3  
**RRID:** AB\_2737575  
**Isotype:** Mouse IgG2b  $\kappa$   
**Storage:** Sterile 2-8°C

## Product Description

### Specificity:

Clone Y-3 recognizes an epitope on mouse MHC class I H-2K haplotypes b, k, q, r, s, but not d.

### Antigen Distribution:

H-2K is ubiquitously expressed on nucleated cells.

### Background:

H-2K antibody, clone Y-3, recognizes the major histocompatibility complex (MHC) class I H-2K haplotypes b, k, q, r, s, but not d. MHC class I is ubiquitously expressed on the cell surface of nucleated cells and consists of a 45-kDa type I transmembrane glycoprotein ( $\alpha$ -chain or heavy chain) and a 12-kDa soluble protein ( $\beta$ 2-microglobulin,  $\beta$ 2M)<sup>1,2</sup>. The  $\alpha$ -chain consists of three domains ( $\alpha$ 1,  $\alpha$ 2, and  $\alpha$ 3)<sup>3</sup>.  $\alpha$ 1 and  $\alpha$ 2 form the closed antigen-binding groove and bind to 8-10 aa peptides derived from cytosolic antigens<sup>4-6</sup>.  $\beta$ 2M noncovalently associates with  $\alpha$ 3, which is essential for MHC stability. H-2K plays a critical role in the adaptive immune response by presenting endogenous antigens to cytotoxic CD8 T cells. MHC class I molecules can also present exogenous antigens to CD8 T cells via a process known as cross-presentation<sup>7</sup>. The T cell receptor (TCR)/CD3 complex of CD8 T cells interacts with peptide-MHC class I, which induces CD8 T cell activation and subsequent cell-killing. CD8 molecules also bind to MHC class I, which helps augment TCR signaling<sup>8</sup>. In contrast to CD8 T cells, MHC class I is an inhibitory ligand for natural killer (NK) cells, promoting self tolerance<sup>9</sup>. MHC class I also contributes to the positive selection of CD8 T cells and NK cell specificity<sup>10,11</sup>.

### Known Reactivity Species:

Mouse

### Format:

Purified *in vivo* GOLD™ Functional Grade

### Immunogen:

Con A stimulated spleen cells from BALB.B mice

### Formulation

This monoclonal antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

### Purity

≥95% monomer by analytical SEC, >95% by SDS Page

### Endotoxin

< 1.0 EU/mg as determined by the LAL method

**Storage and Stability**

Functional grade preclinical antibodies may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at ≤ -70°C.

**Avoid Repeated Freeze Thaw Cycles.****Product Preparation**

Functional grade preclinical antibodies are manufactured in an animal free facility using *in vitro* cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

**Other Applications Reported in Literature:**

FC

WB

ICC

IP

FA

**Country of Origin**

USA

**References**

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