Store at -20°C

#36064

MHC Class I Antigen Processing and Presentation Antibody Sampler Kit

Support: +1-978-867-2388 (U.S.)
www.cellsignal.com/support

Orders: 877-616-2355 (U.S.)
orders@cellsignal.com

New 12/19

For Research Use Only. Not For Use In Diagnostic Procedures.

Product Includes	Quantity	MW (kDa)	Isotype/Source
Calreticulin (D3E6) XP® Rabbit mAb 12238	20 µl	55	Rabbit IgG
Ubiquitin (E4I2J) Rabbit mAb 43124	20 µl	9-300	Rabbit IgG
HLA-G (E8N9C) XP® Rabbit mAb 79769	20 µl	30-40	Rabbit IgG
Calnexin (C5C9) Rabbit mAb 2679	20 µl	90	Rabbit IgG
TAP2 Antibody 12259	20 µl	72	Rabbit
PSMB8/LMP7 (D1K7X) Rabbit mAb 13635	20 µl	23, 28	Rabbit IgG
TAP1 Antibody 12341	20 µl	68	Rabbit
β2-microglobulin (D8P1H) Rabbit mAb 12851	20 µl	12	Rabbit IgG
IFNGR1 (E444) Antibody 10405	20 µl	45-90	Rabbit
Anti-rabbit IgG, HRP-linked Antibody 7074	100 µl		Goat

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions, and additional application protocols.

Description: The MHC Class I Antigen Processing and Presentation Antibody Sampler Kit provides an economical means to examine key proteins associated with the processing and presentation of MHC class I-restricted antigens. The provided antibodies allow monitoring of total protein levels. The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

Background: The predominant function of class I MHC/β2-microglobulin dimers, which are expressed on the surface of most nucleated cell types, is to modulate the adaptive immune response by presenting proteolytic peptide fragments from cytosolic proteins to cytotoxic CD8+ T cells. In order for self and nonself peptides to be presented by MHC class I molecules, the peptide fragments must first be derived from polyubiquitinated proteins that undergo degradation via the ubiquitin-proteasome system. In the context of inflammatory processes, the enzymatic core of the proteasome can be shaped by IFNγ signaling to contain subunits, such as PSMB8/LMP7, which enhance the presentation of antigenic peptides by antigen presenting cells (1). The resulting cytosolic peptide fragments generated through ubiquitin-dependent proteasomal degradation are then transported into the ER lumen via the peptide transporters, TAP1 and TAP2, where the activity of multiple chaperone proteins, such as calnexin and calreticulin, facilitate loading onto class I MHC/β2-microglobulin dimers for transport to the Golgi and eventually, the cell surface (2-6). Defects in the expression of multiple components of the class I antigen presenting machinery have been observed in both solid and liquid tumors, which serves as a mechanism of tumor-immune evasion (7).

Specificity/Sensitivity: Each antibody in the MHC Class I Antigen Processing and Presentation Antibody Sampler Kit detects endogenous levels of its target protein. Calreticulin (D3E6) XP® Rabbit mAb recognizes endogenous levels of total calreticulin protein. Ubiquitin (E4I2J) Rabbit mAb recognizes endogenous levels of free ubiquitin and polyubiquitinated proteins. This antibody is able to detect free ubiquitin, linear polyubiquitin (M1-linked), and homotypic polyubiquitin chains consisting of K6, K11, K27, K29, K33, K48 and K63 linkages. HLA-G (E8N9C) XP® Rabbit mAb recognizes endogenous levels of total HLA-G protein. Calnexin (C5C9) Rabbit mAb detects endogenous levels of total calnexin protein. TAP2 Antibody recognizes endogenous levels of total TAP2 protein. PSMB8/LMP7 (D1K7X) Rabbit mAb recognizes endogenous levels of total PSMB8/LMP7 protein. This antibody recognizes both 28 kDa precursor and 23 kDa mature forms of PSMB8/LMP7 and does not cross-react with PSMB5 protein. This antibody recognizes proteins of unknown origin in the 80-100 kDa range. TAP1 Antibody recognizes endogenous levels of total TAP1 protein. This antibody cross-reacts with a 100 kDa protein of unknown origin. β2-microglobulin (D8P1H) Rabbit mAb recognizes endogenous levels of total β2-microglobulin protein. IFNGR1 (E444) Antibody recognizes endogenous levels of total IFNGR1 protein.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibodies.*

Please visit www.cellsignal.com for validation data and a complete listing of recommended companion products.

Background References:

(1) Ferrington, D.A. and Gregerson, D.S. (2012) *Prog Mol Biol Transl Sci* 109, 75-112.

(2) Antoniou, A.N. et al. (2003) *Curr Opin Immunol* 15, 75-81.

(3) Jensen, P.E. (2007) *Nat Immunol* 8, 1041-8.

(4) Kloetzel, P.M. (2001) *Nat Rev Mol Cell Biol* 2, 179-87.

(5) Sant, A. and Yewdell, J. (2003) *Curr Opin Immunol* 15, 66-8.

(6) Yewdell, J.W. (2005) *Immunol Rev* 207, 8-18.

(7) Seliger, B. (2008) *Cancer Immunol Immunother* 57, 1719-26.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human calreticulin protein, the carboxy terminus of human PSMB8/LMP7 protein, Gly35 of human ubiquitin protein, Leu102 of human HLA-G protein, Val57 of human β2-microglobulin protein, and Pro52 of human calnexin protein. Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val612 of mouse TAP1 protein, Phe588 of human TAP2 protein, and Glu444 of human IFNGR1 protein. Polyclonal antibodies are purified by protein A and peptide affinity chromatography.

U.S. Patent No. 7,429,487, foreign equivalents, and child patents deriving therefrom.

Thank you for your recent purchase. If you would like to provide a review visit cellsignal.com/comments.

www.cellsignal.com

Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.