Revision 7

Store at -20C

#36064

MHC Class I Antigen Processing and Presentation Antibody Sampler Kit

1 Kit (9 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat
Calreticulin (D3E6) XP® Rabbit mAb	12238	20 µl	55 kDa	Rabbit IgG
Ubiquitin (E4I2J) Rabbit mAb	43124	20 µl		Rabbit IgG
HLA-G (E8N9C) XP® Rabbit mAb	79769	20 µl	30-40 kDa	Rabbit IgG
Calnexin (C5C9) Rabbit mAb	2679	20 µl	90 kDa	Rabbit IgG
PSMB8/LMP7 (D1K7X) Rabbit mAb	13635	20 µl	23, 28 kDa	Rabbit IgG
β2-microglobulin (D8P1H) Rabbit mAb	12851	20 µl	12 kDa	Rabbit IgG
IFNGR1 (E444) Antibody	10405	20 µl	45-90 kDa	Rabbit
TAP2 (E8G5I) Rabbit mAb	25657	20 µl	72 kDa	Rabbit IgG
TAP1 (E4T4F) Rabbit mAb	49671	20 µl	68 kDa	Rabbit IgG

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

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.

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.*

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).

Background References

1. Ferrington, D.A. and Gregerson, D.S. (2012) *Prog Mol Biol Transl Sci* 109, 75-112.
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3. Jensen, P.E. (2007) *Nat Immunol* 8, 1041-8.
4. Kloetzel, P.M. (2001) *Nat Rev Mol Cell Biol* 2, 179-87.
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6. Yewdell, J.W. (2005) *Immunol Rev* 207, 8-18.
7. Seliger, B. (2008) *Cancer Immunol Immunother* 57, 1719-26.

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