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β2-microglobulin (D8P1H) Rabbit mAb

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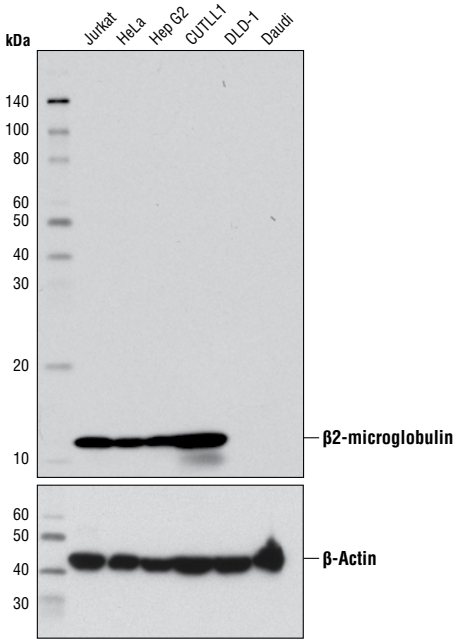
Entrez Gene ID #567
UniProt ID #P61769

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IHC-P, IF-IC, F Endogenous	H, Mk	12 kDa	Rabbit IgG**

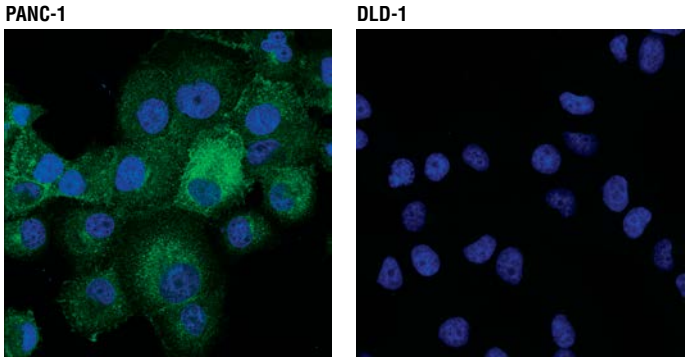
Background: β2-microglobulin (B2M) is a principal component of the Major Histocompatibility Complex (MHC) class I molecule, a ternary membrane protein complex that displays fragments derived from proteolyzed cytosolic proteins on the surface of cells for recognition by the surveillance immune system (1,2). As an integral component of the MHC class I complex, β2-microglobulin plays a critically important role in immune system function (3). It has important relevance to cancer biology research; for example, research studies have shown that nearly one-third of diffuse large B cell lymphomas contain mutations that inactivate β2-microglobulin gene function, thereby allowing tumor cells to escape immune detection (4). In addition, β2-microglobulin has been identified as an amyloid preprotein with collagen-binding affinity (5); its accumulation in osteoarthritic lesions of long-term dialysis patients is reportedly a contributing factor to the condition known as amyloid osteoarthropathy (6).

Specificity/Sensitivity: β2-microglobulin (D8P1H) Rabbit mAb recognizes endogenous levels of total β2-microglobulin protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val57 of human β2-microglobulin protein.



Western blot analysis of extracts from various cell lines using β2-microglobulin (D8P1H) Rabbit mAb (upper) and β-Actin (DA8) Rabbit mAb #8457 (lower). DLD-1 and Daudi cell lines are negative for β2-microglobulin due to genomic deletions at the β2-microglobulin locus.



Confocal immunofluorescent analysis of PANC-1 (positive, left) and DLD-1 (negative, right) cells, using β2-microglobulin (D8P1H) Rabbit mAb (green). Blue pseudocolor= DRAQ5® #4084 (fluorescent DNA dye).

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 antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunohistochemistry (Paraffin)	1:6000
Unmasking buffer:	Citrate
Antibody diluent:	SignalStain® Antibody Diluent #8112
Detection reagent:	SignalStain® Boost (HRP, Rabbit) #8114
Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.	
Immunofluorescence (IF-IC)	1:100
IF Protocol:	Methanol Permeabilization required
Flow Cytometry	1:100

For product specific protocols please see the web page for this product at www.cellsignal.com.

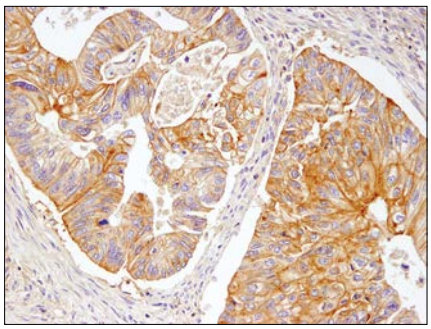
Please visit www.cellsignal.com for a complete listing of recommended complementary products.

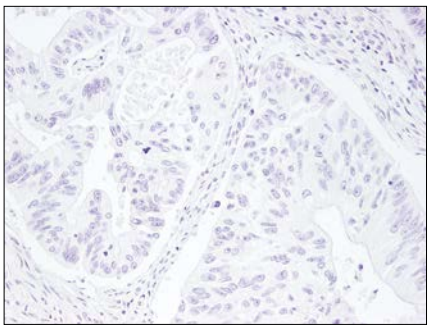
Background References:

(1) Krangel, M.S. et al. (1979) *Cell* 18, 979-91.
(2) Collins, E.J. et al. (1995) *Proc Natl Acad Sci USA* 92, 1218-21.
(3) Marx, J.I. (1974) *Science* 185, 428-9.
(4) Challa-Malladi, M. et al. (2011) *Cancer Cell* 20, 728-40.
(5) Gorevic, P.D. et al. (1985) *J Clin Invest* 76, 2425-9.
(6) Ohashi, K. (2001) *Pathol Int* 51, 1-10.

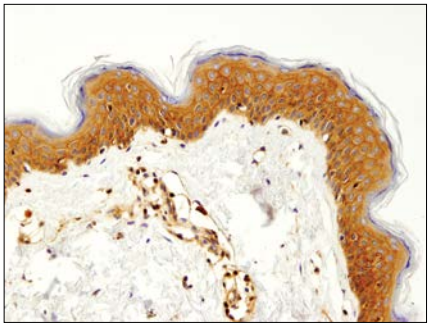
IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **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.

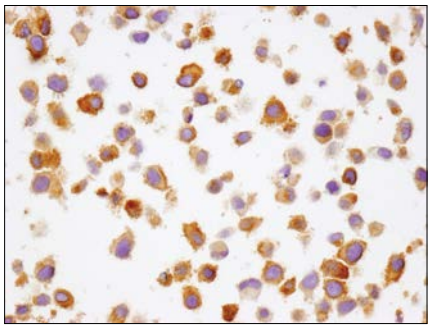


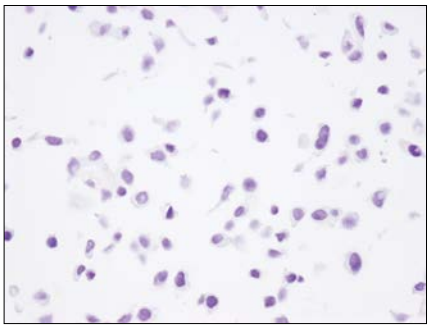


Immunohistochemical analysis of paraffin-embedded colon carcinoma using β2-microglobulin (D8P1H) Rabbit mAb in the presence of control peptide (left) or antigen-specific peptide (right).

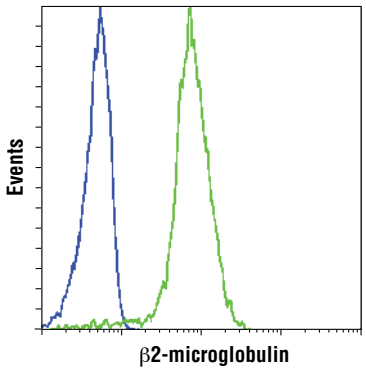


Immunohistochemical analysis of paraffin-embedded human skin using β2-microglobulin (D8P1H) Rabbit mAb.





Immunohistochemical analysis of paraffin-embedded HeLa (left) and DLD-1 (right) cell pellets using β2-microglobulin (D8P1H) Rabbit mAb.



Flow cytometric analysis of DLD-1 cells (blue) and HeLa cells (green) using β2-microglobulin (D8P1H) Rabbit mAb. Anti-rabbit IgG (H+L), F(ab')$_2$ Fragment (Alexa Fluor® 647 Conjugate) #4414 was used as a secondary antibody.