

Anti-Beta 2 Microglobulin B2M Antibody Picoband™ (monoclonal, 2H10)

Catalog # ABO14818

Product Information

Application	WB, IHC, IF, ICC, FC
Primary Accession	P61769
Host	Mouse
Isotype	Mouse IgG2b
Reactivity	Human, Monkey
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-Beta 2 Microglobulin B2M Antibody Picoband™ (monoclonal, 2H10) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human, Monkey.

Additional Information

Gene ID	567
Other Names	Beta-2-microglobulin, Beta-2-microglobulin form pI 5.3, B2M (HGNC:914)
Calculated MW	13715
Application Details	Western blot, 0.1-0.5 µg/ml Immunohistochemistry (Paraffin-embedded Section), 0.5-1 µg/ml Immunocytochemistry/Immunofluorescence, 2 µg/ml Flow Cytometry, 1-3 µg/1x10 ⁶ cells
Subcellular Localization	Secreted
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na ₂ HPO ₄ , 0.05mg NaN ₃ .
Clone Names Immunogen	Clone: 2H10 E.coli-derived human Beta 2 Microglobulin recombinant protein (Position: Q22-M119). Human Beta 2 Microglobulin shares 69.4% and 74.5% amino acid (aa) sequence identity with mouse and rat Beta 2 Microglobulin, respectively.
Cross Reactivity	No cross-reactivity with other proteins.
Storage	Store at -20 °C for one year from date of receipt. After reconstitution, at 4 °C for one month. It can also be aliquotted and stored frozen at -20 °C for six months. Avoid repeated freeze-thaw cycles.

Protein Information

Name	B2M (HGNC:914)
Function	Component of the class I major histocompatibility complex (MHC). Involved in the presentation of peptide antigens to the immune system. Exogenously applied M.tuberculosis EsxA or EsxA-EsxB (or EsxA expressed in host) binds B2M and decreases its export to the cell surface (total protein levels do not change), probably leading to defects in class I antigen presentation (PubMed: 25356553).
Cellular Location	Secreted. Cell surface. Note=Detected in serum and urine (PubMed:1336137, PubMed:7554280). {ECO:0000269 PubMed:7554280, ECO:0000269 Ref.6}

Background

Beta-2 microglobulin also known as B2M is a component of MHC class I molecules, which are present on all nucleated cells (excludes red blood cells). In humans, the beta-2-microglobulin protein is encoded by the B2M gene. The protein has a predominantly beta-pleated sheet structure that can form amyloid fibrils in some pathological conditions. The encoded antimicrobial protein displays antibacterial activity in amniotic fluid. A mutation in this gene has been shown to result in hypercatabolic hypoproteinemia.

Images

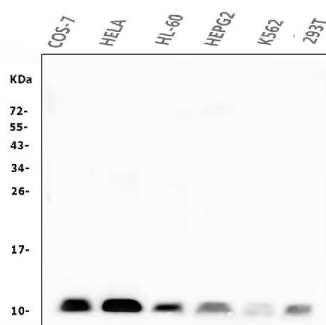
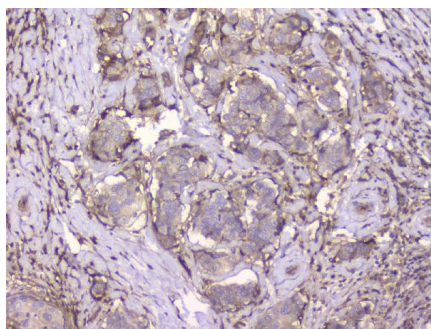


Figure 1. Western blot analysis of Beta 2 Microglobulin using anti-Beta 2 Microglobulin antibody (M00456-2). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions. Lane 1: COS-7 whole cell lysates, Lane 2: HELA whole cell lysates, Lane 3: HL-60 whole cell lysates, Lane 4: HEPG2 whole cell lysates, Lane 5: K562 whole cell lysates, Lane 6: 293T whole cell lysates. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-Beta 2 Microglobulin antigen affinity purified monoclonal antibody (Catalog # M00456-2) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for Beta 2 Microglobulin at approximately 12KD. The expected band size for Beta 2 Microglobulin is at 12KD.

Figure 2. IHC analysis of Beta 2 Microglobulin using anti-Beta 2 Microglobulin antibody (M00456-2). Beta 2 Microglobulin was detected in paraffin-embedded



section of human mammary cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 $\mu\text{g}/\text{ml}$ mouse anti-Beta 2 Microglobulin Antibody (M00456-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

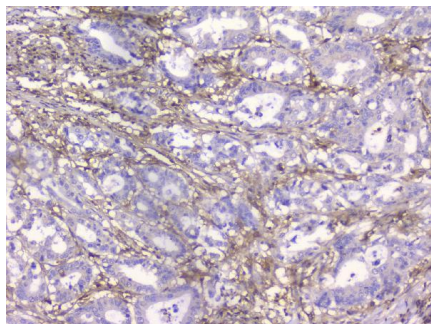


Figure 3. IHC analysis of Beta 2 Microglobulin using anti-Beta 2 Microglobulin antibody (M00456-2). Beta 2 Microglobulin was detected in paraffin-embedded section of human intestinal cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 $\mu\text{g}/\text{ml}$ mouse anti-Beta 2 Microglobulin Antibody (M00456-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

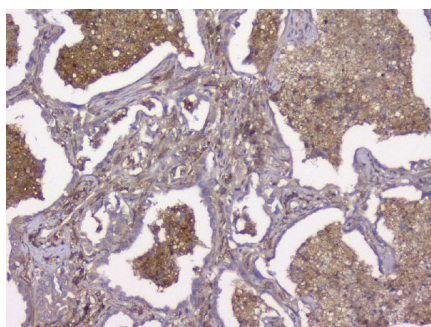


Figure 4. IHC analysis of Beta 2 Microglobulin using anti-Beta 2 Microglobulin antibody (M00456-2). Beta 2 Microglobulin was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 $\mu\text{g}/\text{ml}$ mouse anti-Beta 2 Microglobulin Antibody (M00456-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

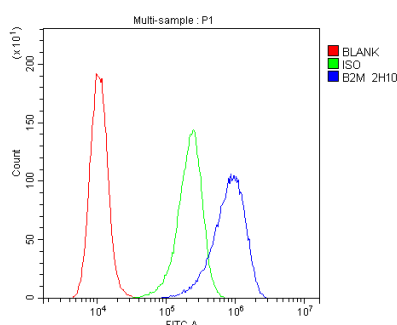
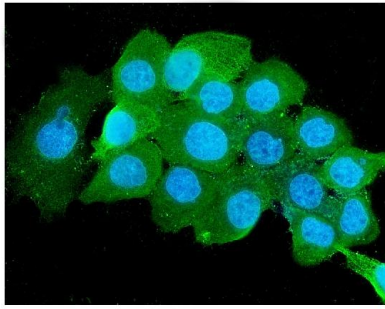


Figure 5. Flow Cytometry analysis of A431 cells using anti-Beta 2 Microglobulin antibody (M00456-2). Overlay histogram showing A431 cells stained with M00456-2 (Blue line). The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-Beta 2 Microglobulin Antibody (M00456-2, 1 $\mu\text{g}/1 \times 10^6$ cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 $\mu\text{g}/1 \times 10^6$ cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 $\mu\text{g}/1 \times 10^6$) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

Figure 6. IF analysis of Beta 2 Microglobulin using anti-Beta 2 Microglobulin antibody (M00456-2). Beta 2 Microglobulin was detected in immunocytochemical section of A431 cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated



with 2 µg/mL mouse anti-Beta 2 Microglobulin Antibody (M00456-2) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.