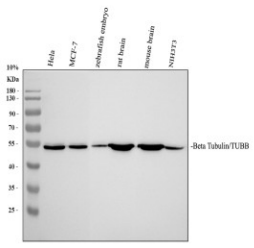
TUBB Antibody / Beta Tubulin Antibody (R32611)

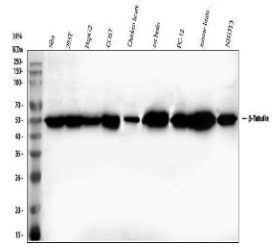
Catalog No.	Formulation	Size
R32611	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Species Reactivity	Human, Mouse, Rat, Monkey, Chicken, Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P07437
Localization	Cytoplasmic
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Flow cytometry: 1-3ug/million cells Immunofluorescence: 5ug/ml
Limitations	This TUBB Antibody / Beta Tubulin Antibody is available for research use only.



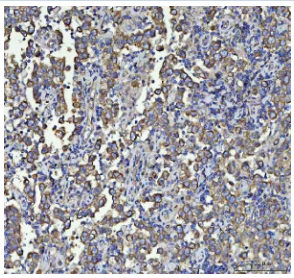
TUBB Antibody Human, Zebrafish, Mouse and Rat WB. Western blot analysis was performed using TUBB Antibody on human HeLa and MCF-7 cell lysates (lanes 1-2), zebrafish embryo lysate (lane 3), rat brain tissue lysate (lane 4), and mouse brain and NIH3T3 cell lysates (lanes 5-6). Samples (30 ug) were separated by 10% SDS-PAGE under reducing conditions. The antibody was used at 0.125 ug/ml overnight at 4oC. A specific band was detected at approximately 50 kDa, consistent with the expected molecular weight of beta tubulin. This TUBB Antibody demonstrates detection of beta tubulin across human, zebrafish, mouse and rat samples.



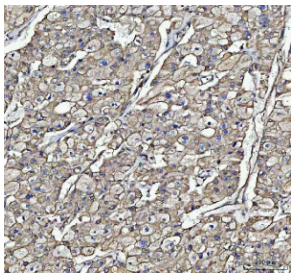
TUBB Antibody Multi-Species Beta Tubulin WB. Western blot analysis was performed using TUBB Antibody on human SiHa, 293T and HepG2 cell lysates (lanes 1-3), monkey COS-7 cells (lane 4), chicken heart (lane 5), rat brain and PC-12 cells (lanes 6-7), and mouse brain and NIH/3T3 cells (lanes 8-9). Samples (30 ug) were separated by 5-20% SDS-PAGE under reducing conditions. The antibody was used at 0.5 ug/ml overnight at 4oC. A prominent band was detected at approximately 50 kDa, consistent with the expected molecular weight of beta tubulin. This TUBB Antibody demonstrates broad detection of beta tubulin across multiple vertebrate species and sample types.



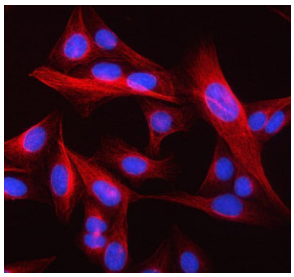
TUBB Antibody Beta Tubulin Loading Control WB. Western blot analysis was performed using TUBB Antibody on human OCI-LY1 shCtrl and OCI-LY1 shSRPK1-2 whole cell lysates. Samples (30 ug) were separated by 5-20% SDS-PAGE under reducing conditions and transferred to a nitrocellulose membrane. The antibody was used at 1:3000 overnight at 4oC, followed by HRP-conjugated secondary antibody and ECL detection. A beta tubulin band was detected at approximately 55 kDa. Comparable detection across the samples demonstrates the use of this TUBB Antibody as a beta tubulin loading control in Western blot analysis.



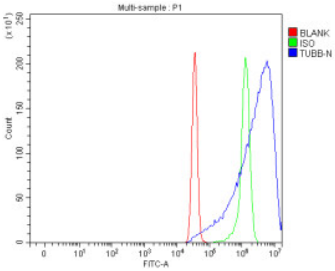
TUBB Antibody Human Testicular Germ Cell Tumor IHC. IHC staining of FFPE human testicular germ cell tumor tissue was performed with TUBB Antibody at 2 ug/ml overnight at 4oC. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer, followed by HRP-conjugated secondary antibody and DAB detection. Positive beta tubulin staining is observed throughout the tumor tissue with a predominantly cytoplasmic pattern. This TUBB Antibody demonstrates localization of beta tubulin in human testicular germ cell tumor tissue.



TUBB Antibody Human Liver Cancer IHC. IHC staining of FFPE human liver cancer tissue was performed with TUBB Antibody at 2 ug/ml overnight at 4oC. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer, followed by HRP-conjugated secondary antibody and DAB detection. Positive beta tubulin staining is observed throughout the tumor cells with a predominantly cytoplasmic pattern. This TUBB Antibody demonstrates localization of beta tubulin in human liver cancer tissue.



TUBB Antibody Human Osteosarcoma Cell IF. Immunofluorescent staining of human U2OS cells was performed with TUBB Antibody at 5 ug/ml overnight at 4oC. Enzyme antigen retrieval was performed for 15 minutes, followed by Cy3-conjugated secondary antibody (red) and DAPI nuclear counterstain (blue). Strong beta tubulin staining highlights the cytoplasmic microtubule network throughout the cells. This TUBB Antibody demonstrates localization of beta tubulin and microtubule organization in human osteosarcoma cells.



TUBB Antibody Human Cervical Cancer Cell Flow Cytometry. Flow cytometry analysis of fixed and permeabilized human SiHa cells was performed with TUBB Antibody at 1 ug/million cells for 30 minutes at 20oC. The histogram shows cells alone (red), isotype control (green) and TUBB Antibody staining (blue). A clear fluorescence shift is observed with the TUBB Antibody compared with the isotype control. This TUBB Antibody demonstrates intracellular detection of beta tubulin in human cervical cancer cells.

Description

TUBB Antibody / Beta Tubulin Antibody detects TUBB, a major beta-tubulin protein and structural component of cellular microtubules. TUBB is also known as tubulin beta class I and is encoded by the TUBB gene. Beta tubulin associates with alpha tubulin to form alpha/beta-tubulin heterodimers, which polymerize into microtubules. These dynamic cytoskeletal structures are essential for maintaining cell shape, organizing intracellular architecture, transporting cellular components and forming the mitotic spindle during cell division.

Microtubules are composed of repeating alpha- and beta-tubulin heterodimers arranged into protofilaments. Their continuous cycles of polymerization and depolymerization, known as dynamic instability, allow the microtubule cytoskeleton to rapidly reorganize in response to cellular requirements. Beta tubulin contributes directly to this dynamic behavior through its interaction with guanine nucleotides and neighboring tubulin molecules. A TUBB Antibody can therefore support studies examining microtubule organization, cytoskeletal structure and changes in tubulin expression across biological samples.

TUBB plays an especially important role during cell division. Microtubules reorganize to form the mitotic spindle, which captures and separates chromosomes during mitosis. Proper regulation of microtubule dynamics is necessary for accurate chromosome segregation and maintenance of genomic stability. Outside mitosis, microtubules provide tracks for motor proteins such as kinesins and dyneins, enabling directional movement of vesicles, organelles, proteins and other cargo throughout the cytoplasm.

Beta tubulin proteins are encoded by a family of closely related genes whose products share substantial sequence similarity but can differ in expression patterns and biological specialization. TUBB, commonly referred to as beta tubulin class I, should therefore be distinguished from other beta-tubulin family members such as TUBB2A, TUBB2B, TUBB3, TUBB4A and TUBB6. Some beta-tubulin isoforms show tissue- or cell-type-associated expression patterns, whereas class I beta tubulin is broadly expressed. Antibody cross-reactivity among beta-tubulin isoforms can depend on the epitope recognized and should be considered when interpreting experimental results.

Microtubules are important in cancer, neuroscience and cell biology research. Their essential role in mitosis makes tubulin a major target of antimitotic compounds, including taxanes and vinca alkaloids. Changes in tubulin expression, isoform composition and microtubule dynamics have consequently been investigated in relation to tumor progression and therapeutic response. Microtubule organization is also particularly important in neurons, where long-distance intracellular transport is required to maintain axons, dendrites and synaptic function.

NSJ Bioreagents offers TUBB Antibody reagents for investigating beta tubulin expression and microtubule biology. A Beta Tubulin Antibody can support research into cytoskeletal organization, microtubule dynamics, mitosis, intracellular transport and other cellular processes dependent on the tubulin cytoskeleton.

Researchers using beta tubulin for protein normalization can explore our Loading Control Antibodies page for additional housekeeping protein targets commonly used in Western blot analysis.

Application Notes

Optimal dilution of the TUBB Antibody / Beta Tubulin Antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human Beta Tubulin was used as the immunogen for the TUBB Antibody.

Storage

After reconstitution, the TUBB Antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

TUBB antibody, Beta Tubulin antibody, Tubulin Beta Class I antibody, Beta Tubulin Class I antibody, TUBB5 antibody

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