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DATASHEET

Anti- β III Tubulin antibody ValidAb TM

Product overview

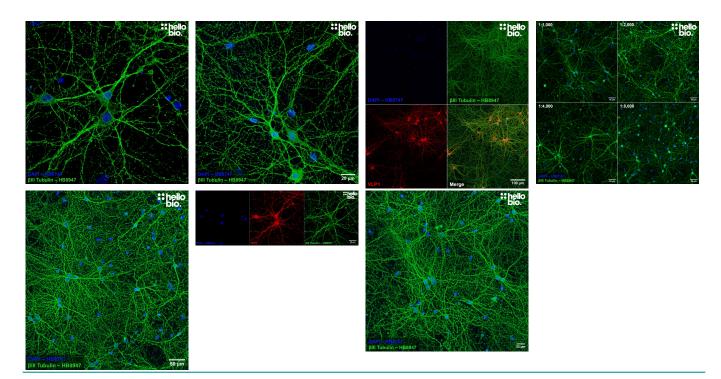
Name Anti-βIII Tubulin antibody ValidAbTM

Cat No HB8947
Host Chicken
Clonality Polyclonal
Target βIII tubulin

Description Antibody to βIII Tubulin - cytoskeletal protein used as a neuronal marker. Part of the ValidAb™ range

of highly validated, data-rich antibodies.

Validation data



Product information

Immunogen Combination of three synthetic peptides derived from human MAP2

Isotype lgY

Purification Immunogen affinity chromatography

Concentration 0.3mg/ml

Formulation Lyophilised. When reconstituted contains PBS with 0.02% sodium azide and 1% recombinant BSA.

Predicted species reactivity Mouse, Rat, Human

Tested species reactivity Mouse, Rat

Tested applications

Applications

ICC optimal concentration

Positive control

1:2,000 as tested in cultured rat neurons

B3-tubulin is widely expressed in neural tissues. It is also well expressed in SH-SY5Y, Hep G2, A549

and SCLC-21H cell lines.

Negative control Non-neural tissues, except for tissue from the testes. Poorly expressed in many cell lines such as

JURKAT, HeLa and HEK293.

Open data link

Please follow this link to OSF

Target information

Other names TUBB3, Tubulin beta-4 chain, Tubulin beta-III

UniProt ID Q13509 Gene name TUBB3 NCBI full gene name tubulin beta 3 Entrez gene ID 10381

Amino acids 450 (50.4kDa)

Isoforms Beta III tubulin has two isoforms. Isoform 1: canonical; Isoform 2: missing amino acids 1-72

Expression Beta III tubulin is expressed almost exclusively within neurones present in the central nervous system and peripheral nervous system. Expression has also been found within the sertoli cells of the testes. Subcellular expression

Beta III tubulin is a key cytoskeletal component therefore is widely expressed as bundles of Beta III

tubulin positive fibres.

Target function Beta III tubulin forms a key part of the cytoskeleton in neurones and has also been reported to have

> important roles in regulating the oxidative stress and glucose deprivation response in neurones. Beta III tubulin has also been found to be an important prognostic indicator in cancer with expression being

associated with treatment resistance and tumour aggressiveness.

Processing Post translational modifications

Following translation no processing is required for Beta III tubulin to reach its active conformation. Beta III tubulin is subject to three postranslational modifications: phosphorylation by CDK1 at Ser172, Polyglutamylation at Glu438 and phosphorylation at Ser 444 (note: this is within the epitope of

HB6639)

Homology (compared to

human)

Similar proteins

Mouse and human proteins are identical while rat beta III tubulin shows a single change (E440D)

Beta III tubulin shows similarity in a BLAST search to other beta tubulin family members (e.g. Tubulin beta IV 100%, tubulin beta VI 96%, tubulin beta IIA 95%, tubulin beta IIB 95%) alongside alpha tubulin

(96% similarity) and epididymis sperm binding protein (95%)

Storage & Handling

Storage instructions Reconstitution advice -20°C then use reconstitution advice Upon receipt store at either -20°C or -80°C.

For 100µg packs either:

- Reconstitute with 100µl dH2O and store at 4°C
- Reconstitute with 50µl dH₂O and 50µl glycerol then store at -20°C
- Reconstitute with 100 μ l dH $_2$ O, aliquot then snap freeze and store at -80 $^{\circ}$ C

For 25µg packs either:

- Reconstitute with 25µl dH₂O and store at 4°C
- Reconstitute with 12.5µl dH₂O and 12.5µl glycerol then store at -20°C
- Reconstitute with 25µl dH₂O, aliquot then snap freeze and store at -80°C

For more information read our guide on the best care for your product. Take care when opening as the precipitate is extremely light and can easily be lost if disturbed. When reconstituting make sure that the antibody is thoroughly dissolved by pipetting up and down before giving the antibody a brief spin at 10,000g to make sure that all material is recovered and at the bottom of the tube.

Important

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

References

Stengel C et al (2010) British journal of cancer 102 **PubMedID** 20029418

Mutations in the neuronal ß-tubulin subunit TUBB3 result in malformation of cortical development and neuronal migration defects.

Poirier K et al (2010) Human molecular genetics 19 **PubMedID** 20829227

Proteomic characterization of cytoskeletal and mitochondrial class III beta-tubulin.

Cicchillitti L et al (2008) Molecular cancer therapeutics 7

PubMedID 18645017