

DATASHEET

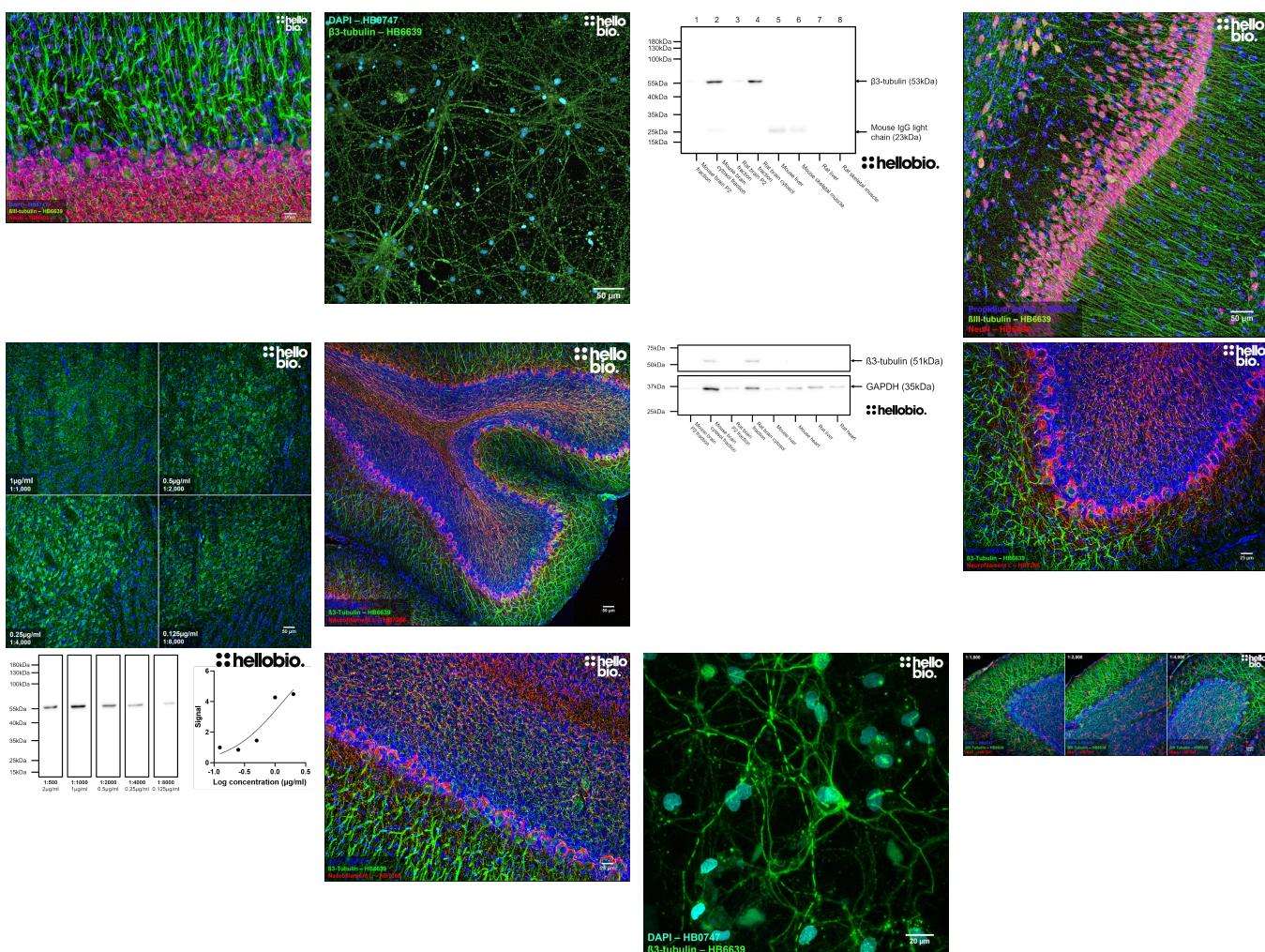
Anti- β III Tubulin antibody ValidAbTM

Product overview

Name	Anti- β III Tubulin antibody ValidAb TM
Cat No	HB6639
Host	Mouse
Clonality	Monoclonal
Target	β III tubulin
Customer comments	<i>The antibody works fine. Staining in our cultures is the same as our other Beta III Tub Abs - researcher at the University of Western Australia</i>

Description	Antibody to β III Tubulin - cytoskeletal protein used as a neuronal marker. Part of the ValidAb TM range of highly validated, data-rich antibodies.
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Validation data



Product information

Immunogen	Amino acids 441-448 of human beta III tubulin coupled to maleimide-activated keyhole limpet hemocyanin
Epitope	ESESQGPK (Amino acids 441-448 of beta III tubulin)
Clone number	TU-20
Isotype	IgG1
Purification	Protein A affinity chromatography
Concentration	1mg/ml
Formulation	Lyophilised. When reconstituted contains PBS with 15mM sodium azide and 1% recombinant BSA
Predicted species reactivity	Human, Mouse, Rat, Pig, Dog
Tested species reactivity	Mouse, Rat

Tested applications

Applications	ICC, WB, IHC(IF)
Western blot optimal concentration	1µg/ml (1:1000) as measured in rat brain cytosol
IHC(IF) optimal concentration	1µg/ml (1:1000) as measured in free-floating fixed hippocampal sections
ICC optimal concentration	1µg/ml (1:1000) as measured in a cultured rat hippocampal neuron preparation.
Positive control	β3-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	Following translation no processing is required for Beta III tubulin to reach its active conformation.
Post translational modifications	Beta III tubulin is subject to three posttranslational 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)	Mouse and human proteins are identical while rat beta III tubulin shows a single change (E440D)
Similar proteins	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%)
Epitope homology (between species)	The epitope sequence is conserved between humans, mice and rats within beta III tubulin

Other names
Epitope homology (other proteins)

TUBB3, Tubulin beta-4 chain, Tubulin beta-III
Proteins containing the sequence of the epitope of HB6639 include:

- Myosin cardiac beta chain (Mice 100%, 87.5 human) - 221.5kDa,
- Bromodomain and PHD finger containing protein (1aa difference) 135.7kDa,
- MAP2 (85.7% match) - 199.5kDa,
- MAPK2 (87.5% match) - 42kDa,
- FAM43A (85.7% match) - 46kDa

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 100µl dH₂O, aliquot then snap freeze and store at -80°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

Proteomic characterization of cytoskeletal and mitochondrial class III beta-tubulin

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Human TUBB3 mutations perturb microtubule dynamics, kinesin interactions, and axon guidance

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Class III β-tubulin expression and in vitro resistance to microtubule targeting agents

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