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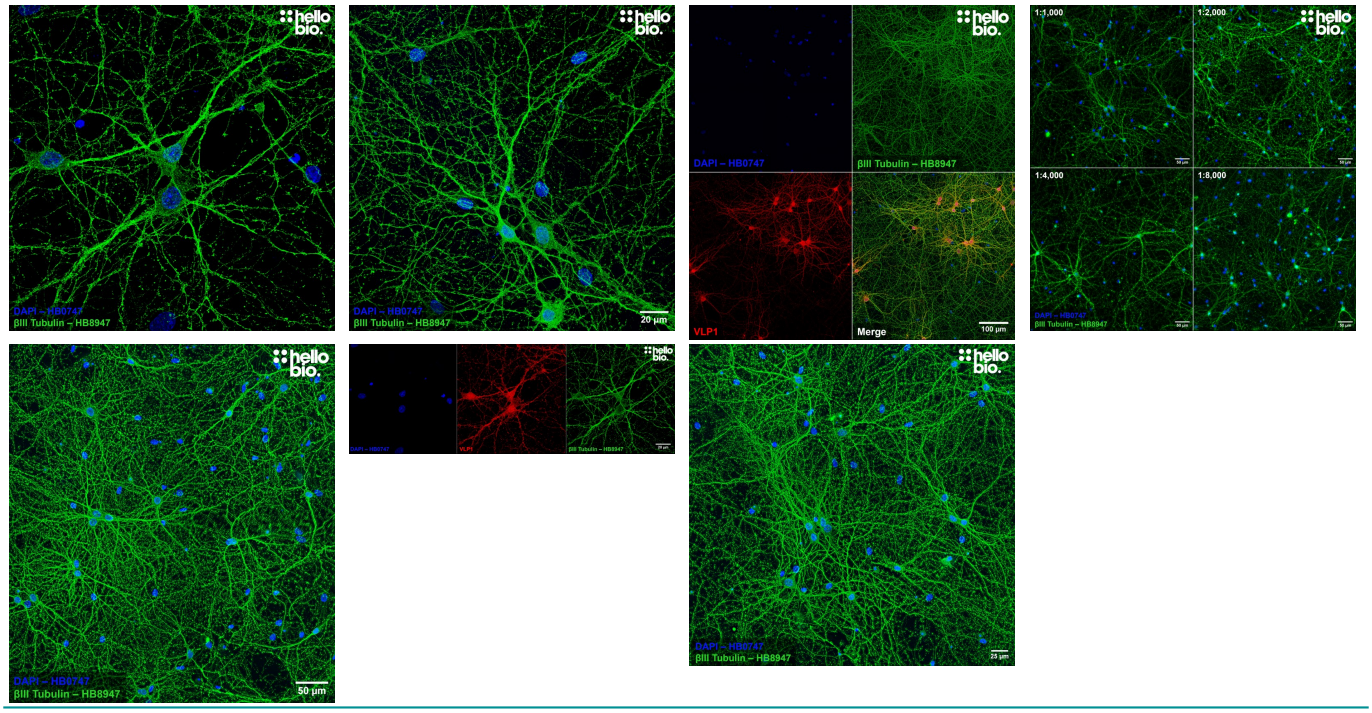
DATASHEET

Anti-βIII Tubulin antibody ValidAb™

Product overview

Name	Anti-βIII Tubulin antibody ValidAb™
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	IgY
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

ICC optimal concentration	1:2,000 as tested in cultured rat neurons
Positive control	ß3-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 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)	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%)

Storage & Handling

Storage instructions	-20°C then use reconstitution advice
Reconstitution advice	Upon receipt store at either -20°C or -80°C. For 100µg packs either: • Reconstitute with 100µl dH_2O and store at 4°C • Reconstitute with 50µl dH_2O and 50µl glycerol then store at -20°C • Reconstitute with 100µl dH_2O, aliquot then snap freeze and store at -80°C For 25µg packs either: • Reconstitute with 25µl dH_2O and store at 4°C • Reconstitute with 12.5µl dH_2O and 12.5µl glycerol then store at -20°C • Reconstitute with 25µl dH_2O, 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.
Shipping Conditions	Stable for ambient temperature shipping. Follow storage instructions on receipt.
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

References

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

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