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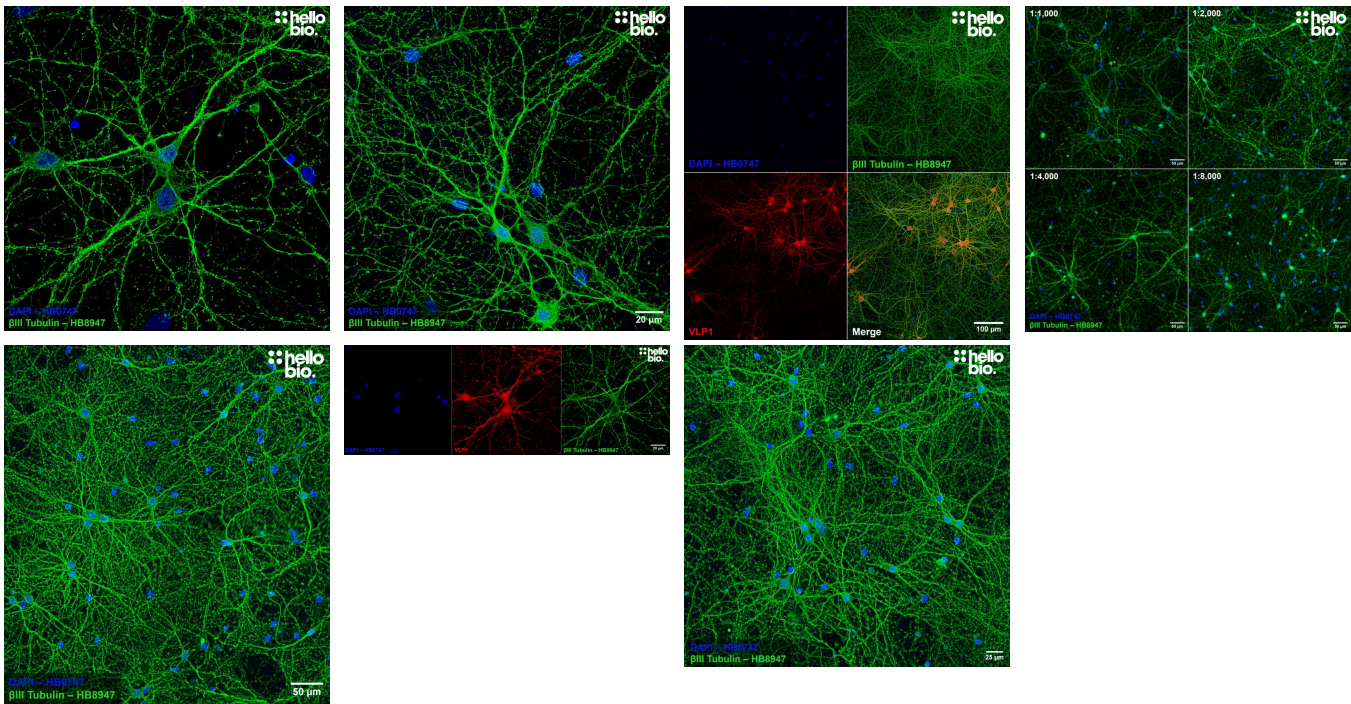
# DATASHEET

## Anti- $\beta$ III Tubulin antibody ValidAb™

### Product overview

<b>Name</b>	Anti- $\beta$ III Tubulin antibody ValidAb™
<b>Cat No</b>	HB8947
<b>Host</b>	Chicken
<b>Clonality</b>	Polyclonal
<b>Target</b>	$\beta$ III tubulin
<b>Description</b>	Antibody to $\beta$ III Tubulin - cytoskeletal protein used as a neuronal marker. Part of the ValidAb™ range of highly validated, data-rich antibodies.

### Validation data



### Product information

<b>Immunogen</b>	Combination of three synthetic peptides derived from human MAP2
<b>Isotype</b>	IgY
<b>Purification</b>	Immunogen affinity chromatography
<b>Concentration</b>	0.3mg/ml
<b>Formulation</b>	Lyophilised. When reconstituted contains PBS with 0.02% sodium azide and 1% recombinant BSA.
<b>Predicted species reactivity</b>	Mouse, Rat, Human
<b>Tested species reactivity</b>	Mouse, Rat

## Tested applications

<b>Applications</b>	ICC
<b>ICC optimal concentration</b>	1:2,000 as tested in cultured rat neurons
<b>Positive control</b>	$\beta$ 3-tubulin is widely expressed in neural tissues. It is also well expressed in SH-SY5Y, Hep G2, A549 and SCLC-21H cell lines.
<b>Negative control</b>	Non-neural tissues, except for tissue from the testes. Poorly expressed in many cell lines such as JURKAT, HeLa and HEK293.
<b>Open data link</b>	Please follow this <a href="#">link to OSF</a>

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## Target information

<b>Other names</b>	TUBB3, Tubulin beta-4 chain, Tubulin beta-III
<b>UniProt ID</b>	Q13509
<b>Gene name</b>	TUBB3
<b>NCBI full gene name</b>	tubulin beta 3
<b>Entrez gene ID</b>	<a href="#">10381</a>
<b>Amino acids</b>	450 (50.4kDa)
<b>Isoforms</b>	Beta III tubulin has two isoforms. Isoform 1: canonical; Isoform 2: missing amino acids 1-72
<b>Expression</b>	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.
<b>Subcellular expression</b>	Beta III tubulin is a key cytoskeletal component therefore is widely expressed as bundles of Beta III tubulin positive fibres.
<b>Target function</b>	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.
<b>Processing</b>	Following translation no processing is required for Beta III tubulin to reach its active conformation.
<b>Post translational modifications</b>	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)
<b>Homology (compared to human)</b>	Mouse and human proteins are identical while rat beta III tubulin shows a single change (E440D)
<b>Similar proteins</b>	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%)

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## Storage & Handling

<b>Storage instructions</b>	-20 °C then use reconstitution advice
<b>Reconstitution advice</b>	<p>Upon receipt store at either -20 °C or -80 °C.</p> <p>For 100µg packs either:</p> <ul style="list-style-type: none"> <li>• Reconstitute with 100µl dH<sub>2</sub>O and store at 4 °C</li> <li>• Reconstitute with 50µl dH<sub>2</sub>O and 50µl glycerol then store at -20 °C</li> <li>• Reconstitute with 100µl dH<sub>2</sub>O, aliquot then snap freeze and store at -80 °C</li> </ul> <p>For 25µg packs either:</p> <ul style="list-style-type: none"> <li>• Reconstitute with 25µl dH<sub>2</sub>O and store at 4 °C</li> <li>• Reconstitute with 12.5µl dH<sub>2</sub>O and 12.5µl glycerol then store at -20 °C</li> <li>• Reconstitute with 25µl dH<sub>2</sub>O, aliquot then snap freeze and store at -80 °C</li> </ul> <p>For more information <a href="#">read our guide</a> 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.</p>
<b>Important</b>	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

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## 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 β-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](#)

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