

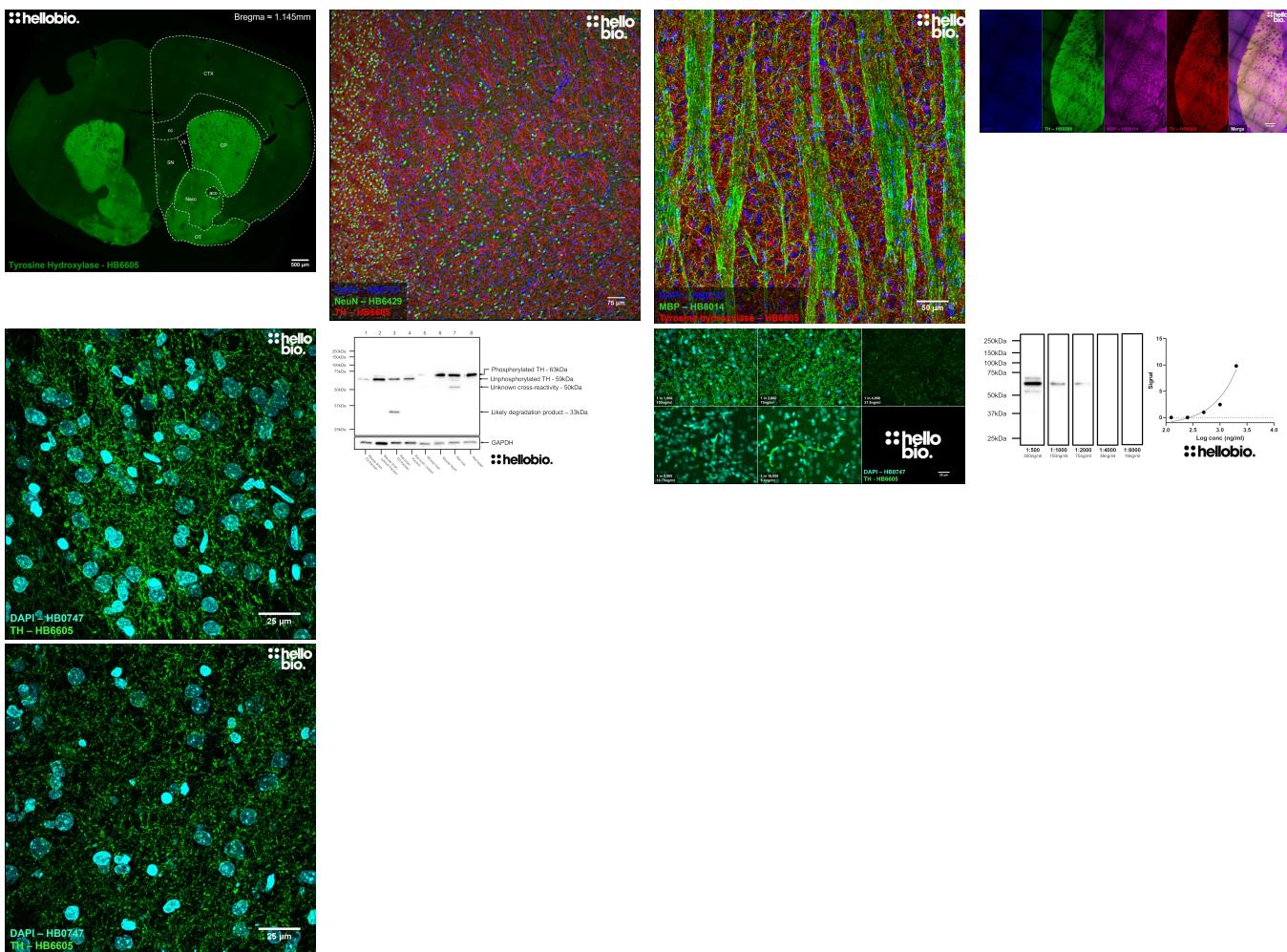
## DATASHEET

### Anti-Tyrosine hydroxylase antibody ValidAb™

#### Product overview

Name	Anti-Tyrosine hydroxylase antibody ValidAb™
Cat No	HB6605
Alternative names	Tyrosine 3-monooxygenase, Tyrosine 3-hydroxylase, TH
Host	Rabbit
Clonality	Polyclonal
Target	Tyrosine hydroxylase
Description	Antibody to tyrosine hydroxylase (TH) - the rate limiting enzyme in catecholamine synthesis and used as a marker for catecholaminergic (dopaminergic and noradrenergic) neurones in the CNS. Part of the <b>ValidAb™</b> range of highly validated, data-rich antibodies.

#### Validation data



#### Product information

<b>Immunogen</b>	Denatured tyrosine hydroxylase purified from a rat phaeochromocytoma (adrenal medulla tumour)
<b>Isotype</b>	IgG
<b>Purification</b>	Immunogen affinity chromatography
<b>Concentration</b>	0.15 mg/ml
<b>Formulation</b>	10 mM HEPES (pH 7.5), 150 mM NaCl, 100µg/ml BSA, 0.05% sodium azide and 50% glycerol.
<b>Predicted species reactivity</b>	Mouse, Rat
<b>Tested species reactivity</b>	Mouse, Rat

## Tested applications

<b>Applications</b>	WB, IHC(IF)
<b>Western blot optimal concentration</b>	1:1000 (150ng/ml) as tested in a rat brain cytosol preparation
<b>IHC(IF) optimal concentration</b>	1:2000 (75ng/ml) as tested in rat striatal brain sections
<b>Positive control</b>	Tissue known to have a high expression of catecholaminergic neurones (e.g. striatum or substantia nigra). PC-3 and SK-BR-3 cell lines also show tyrosine hydroxylase expression.
<b>Negative control</b>	Areas of the brain with low expression of catecholaminergic neurones (e.g. cortex). Most cell lines do not express TH (e.g. HEK293, HeLa, SH-SY5Y).
<b>Open data link</b>	Please follow this <a href="#">link to OSF</a>

## Target information

<b>Other names</b>	Tyrosine 3-monooxygenase, Tyrosine 3-hydroxylase, TH
<b>UniProt ID</b>	P07101
<b>Gene name</b>	TH
<b>NCBI full gene name</b>	tyrosine hydroxylase
<b>Entrez gene ID</b>	<a href="#">7054</a>
<b>Amino acids</b>	528 (58.6kDa)
<b>Isoforms</b>	Tyrosine hydroxylase has 6 isoforms produced by alternative splicing: <ul style="list-style-type: none"><li>Isoform 3 / TH type 4 (canonical) - 528aa, 58.6kDa.</li><li>Isoform 1 / TH type 3 - 524aa, 58.1kDa.</li><li>Isoform 2 / TH type 1/HTH-1 - 497aa, 55.6kDa,</li><li>Isoform 4 / TH type 2/hTH-Delta2 - 501aa, 56.0kDa,</li><li>Isoform 5 / hTH-Delta,2,8,9 - 407aa, 45.3kDa,</li><li>Isoform 6 / hTH-Delta1b,2,8,9 - 403aa 44.9kDa</li></ul>
<b>Expression</b>	Mainly expressed in the dopaminergic, noradrenergic and other catecholergic neurones in the brain and adrenal glands. There is also lower peripheral expression in a variety of tissues.
<b>Subcellular expression</b>	Expression is enriched in axon terminals alongside cytosolic and perinuclear expression.
<b>Target function</b>	Tyrosine hydroxylase is the main rate limiting enzyme in producing catecholamines. The enzyme catalyses the conversion of L-tyrosine to L-DOPA which can then be converted by other enzymes into dopamine and noradrenaline.

<b>Other names</b>	Tyrosine 3-monooxygenase, Tyrosine 3-hydroxylase, TH
<b>Processing</b>	None
<b>Post translational modifications</b>	Subject to phosphorylation on Ser19, Ser62, Ser71 and Ser502.
<b>Homology (compared to human)</b>	Mouse and rat show 82.8% and 83.7% identity to human tyrosine hydroxylase respectively in a BLAST search.
<b>Similar proteins</b>	The following proteins were identified as being similar in a BLAST search: <ul style="list-style-type: none"><li>• Phenylalanine-4-hydroxylase – 52.8% identity</li><li>• Tryptophan-5-hydroxylase 1 – 50.1% identity</li><li>• Tryptophan-5-hydroxylase 2 – 52.1% identity</li></ul>

## Storage & Handling

<b>Storage instructions</b>	-20°C
<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

## References

### Tyrosine hydroxylase and regulation of dopamine synthesis.

Daubner SC et al (2011) Archives of biochemistry and biophysics 508  
**PubMedID** [21176768](#)

### Tyrosine hydroxylase deficiency: a treatable disorder of brain catecholamine biosynthesis.

Willemsen MA et al (2010) Brain : a journal of neurology 133  
**PubMedID** [20430833](#)

### Tyrosine hydroxylase phosphorylation: regulation and consequences.

Dunkley PR et al (2004) Journal of neurochemistry 91  
**PubMedID** [15569247](#)

### Drug-induced changes in brain tyrosine hydroxylase activity in vivo.

Leonard BE (1977) Neuropharmacology 16  
**PubMedID** [13325](#)