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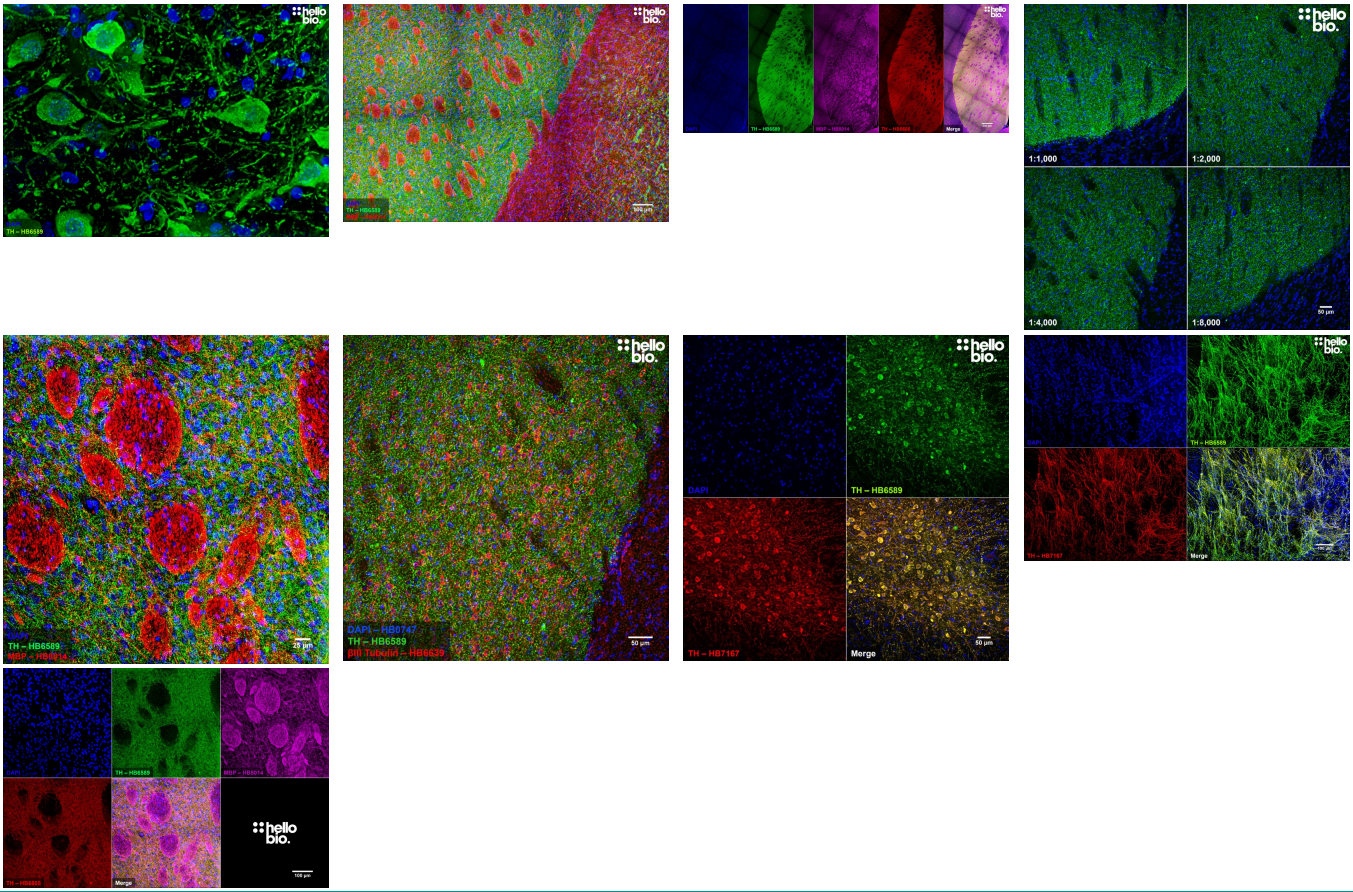
DATASHEET

Anti-Tyrosine hydroxylase antibody ValidAb™

Product overview

Name	Anti-Tyrosine hydroxylase antibody ValidAb™
Cat No	HB6589
Host	Chicken
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 ValidAb™ range of highly validated, data-rich antibodies.

Validation data



Product information

Immunogen	Tyrosine hydroxylase (human) expressed in and purified from *E. coli*
Purification	Immunogen affinity purification
Concentration	1mg/ml
Formulation	50% PBS, 50% glycerol + 5mM sodium azide
Predicted species reactivity	Mouse, Rat, Human

Tested species reactivity	Mouse, Rat

Tested applications

Applications	IHC(IF)
IHC(IF) optimal concentration	1:4000 (0.25µg/ml) as tested in paraformaldehyde fixed rat horizontal brain sections
Positive control	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.
Negative control	Areas of the brain with low expression of catecholaminergic neurones (e.g. cortex). Most cells lines do not express TH (e.g. HEK293, HeLa, SH-SY5Y).
Open data link	Please follow this link to the OSF

Target information

Other names	Tyrosine 3-monooxygenase, Tyrosine 3-hydroxylase, TH
UniProt ID	P07101
Gene name	TH
NCBI full gene name	tyrosine hydroxylase
Entrez gene ID	7054
Amino acids	528 (58.6kDa)
Isoforms	Tyrosine hydroxylase has 6 isoforms produced by alternative splicing: • Isoform 3 / TH type 4 (canonical) - 528aa, 58.6kDa. • Isoform 1 / TH type 3 - 524aa, 58.1kda, • Isoform 2 / TH type 1/HTH-1 - 497aa, 55,6kDa, • Isoform 4 / TH type 2/hTH-Delta2 - 501aa, 56.0kda, • Isoform 5 / hTH-Delta,2,8,9 - 407aa, 45.3kDa, • Isoform 6 / hTH-Delta1b,2,8,9 - 403aa 44.9kDa
Expression	Mainly expressed in the dopaminergic, noradrenergic and other catecholingergic neurones in the brain and adrenal glands. There is also lower peripheral expression in a variety of tissues.
Subcellular expression	Expression is enriched in axon terminals alongside cytosolic and perinuclear expression.
Processing	None
Post translational modifications	Subject to phosphorlyation on Ser19, Ser62, Ser71 and Ser502.
Homology (compared to human)	Mouse and rat show 82.8% and 83.7% identity to human tyrosine hydroxylase respectively in a BLAST search.
Similar proteins	The following proteins were identified as being similar in a BLAST search: • Phenylalanine-4-hydroxylase – 52.8% identity • Tryptophan-5-hydroxylase 1 – 50.1% identity • Tryptophan-5-hydroxylase 2 – 52.1% identity

Storage & Handling

Storage instructions	-20°C
Reconstitution advice	We recommend reconstituting with either: • dH_2O and storing at 4°C • 50:50 ratio of dH_2O to glycerol and storing at -20°C • dH_2O then aliquot and store at -80°C 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	For more information please see our detailed guide on storing and using your antibody This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

References

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

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Tyrosine hydroxylase and regulation of dopamine synthesis.

Daubner SC et al (2011) Archives of biochemistry and biophysics 508
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