

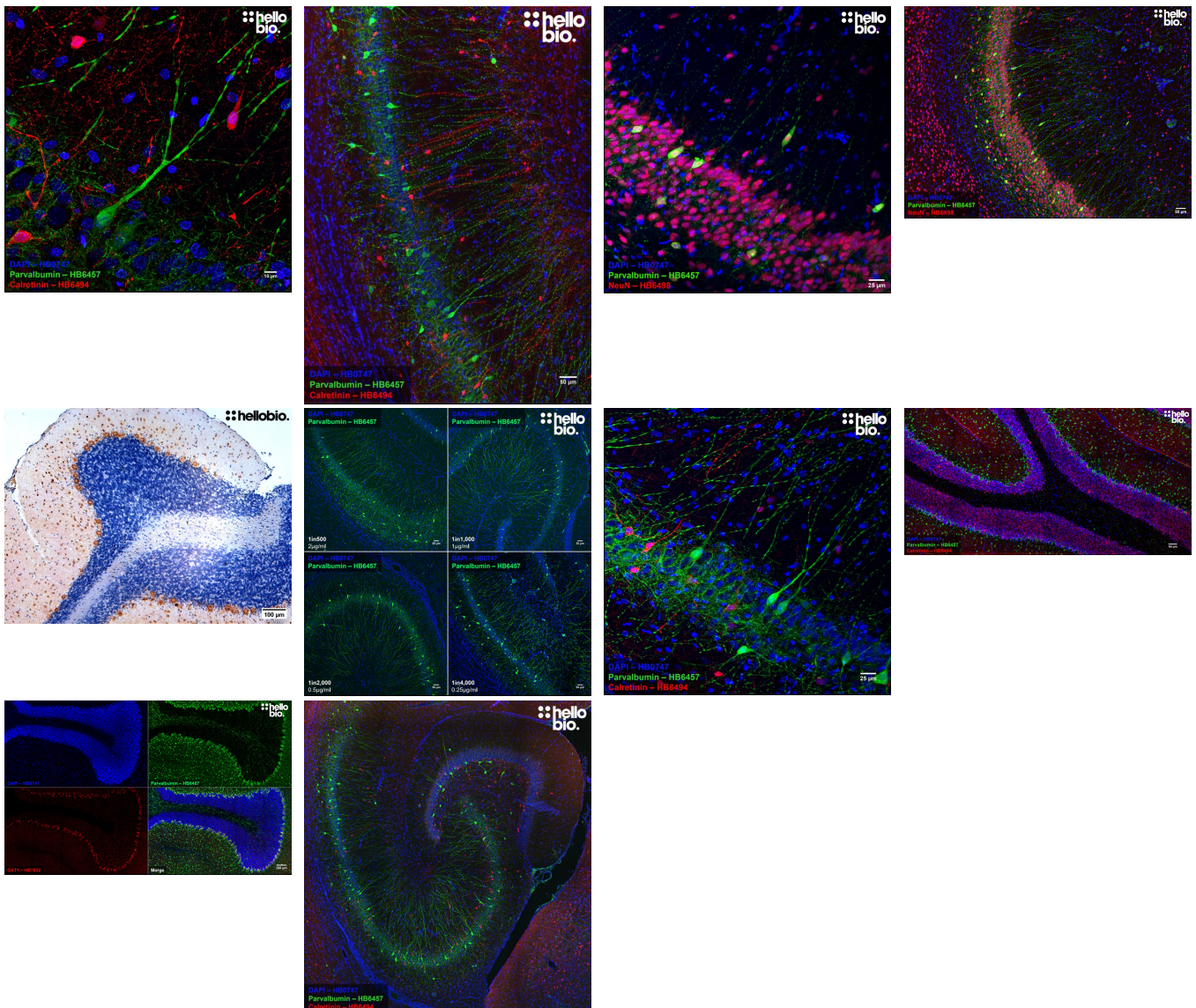
DATASHEET

Anti-Parvalbumin antibody ValidAb™

Product overview

Name	Anti-Parvalbumin antibody ValidAb™
Cat No	HB6457
Host	Mouse
Clonality	Monoclonal
Target	Parvalbumin
Description	Antibody to Parvalbumin - calcium binding protein used as a marker for an inhibitory interneuron subtype. Part of the ValidAb™ range of highly validated, data-rich antibodies.

Validation data



Product information

Immunogen	Recombinant human parvalbumin expressed in and purified from <i>E. coli</i>
Clone number	3C9
Isotype	IgG1
Purification	Protein G affinity chromatography
Concentration	1mg/ml
Formulation	50% PBS, 50% glycerol + 5mM sodium azide
Predicted species reactivity	Mouse, Rat, Human, Pig, Horse, Cow
Tested species reactivity	Mouse, Rat

Tested applications

Applications	IHC-P, IHC(IF)
IHC(IF) optimal concentration	0.25µg/ml (1:4,000) as measured in free-floating paraformaldehyde fixed rat brain sections
IHC-P optimal concentration	1:250 (4µg/ml) as tested in paraffin embedded rat horizontal brain sections using streptavidin-HRP detection system.
Positive control	Parvalbumin is expressed in interneurons in a wide array of brain regions such as the cerebellum and hippocampus.
Negative control	Parvalbumin is not expressed in a range of tissues such as liver, muscle and skin in addition to not expressing in HeLa cells.
Open data link	Please follow this link to OSF

Target information

Other names	Parvalbumin alpha, PV, PVALB, D22S749
UniProt ID	P20472
Gene name	PVALB
NCBI full gene name	Parvalbumin
Entrez gene ID	5816
Amino acids	110 (12.1kDa)
Isoforms	Parvalbumin has only one described isoform
Expression	Parvalbumin is expressed in inhibitory interneurons in various regions of the brain, including the cerebral cortex, hippocampus, and cerebellum. It is also expressed in skeletal muscle and select other tissues such as in the parathyroid gland.
Subcellular expression	Parvalbumin is expressed in the cytosol; in neurones this expression is across the whole cell body, dendritic and axonal compartments.
Processing	Following translation no processing other than having the initiator methionine removed is required for parvalbumin to reach its active conformation.
Post translational modifications	Parvalbumin is subject to phosphorylation on S2, T4 and S24 alongside acetylation on S2.
Homology (compared to human)	Compared to human parvalbumin the mouse and rat homologs show 87.3% and 91.8% identity respectively in a BLAST search. Mouse and rat parvalbumin show a 94.6% identity with 6 amino acid changes.
Similar proteins	In a BLAST search the only identified similar proteins were Oncomodulin-1 (51.4% identity, 12.1kDa) and Oncomodulin-2 (51.4% identity, 12.1kDa)

Storage & Handling

Storage instructions	-20°C
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

References

[The Role of Parvalbumin Interneurons in Neurotransmitter Balance and Neurological Disease.](#)

Nahar L et al (2021) *Frontiers in psychiatry* 12

PubMedID [34220586](#)

[Parvalbumin interneuron vulnerability and brain disorders.](#)

Ruden JB et al (2021) *Neuropsychopharmacology* : official publication of the American College of Neuropsychopharmacology 46

PubMedID

32722660

Parvalbumin-positive interneurons of the prefrontal cortex support working memory and cognitive flexibility.

Murray AJ et al (2015) Scientific reports 5

PubMedID

26608841

Role of the calcium-binding protein parvalbumin in short-term synaptic plasticity.

Caillard O et al (2000) Proceedings of the National Academy of Sciences of the United States of America 97

PubMedID

11069288

Reduction in parvalbumin expression not loss of the parvalbumin-expressing GABA interneuron subpopulation in genetic parvalbumin and shank mouse models of autism.

Filice F et al (2016) Molecular brain 9

PubMedID

26819149
