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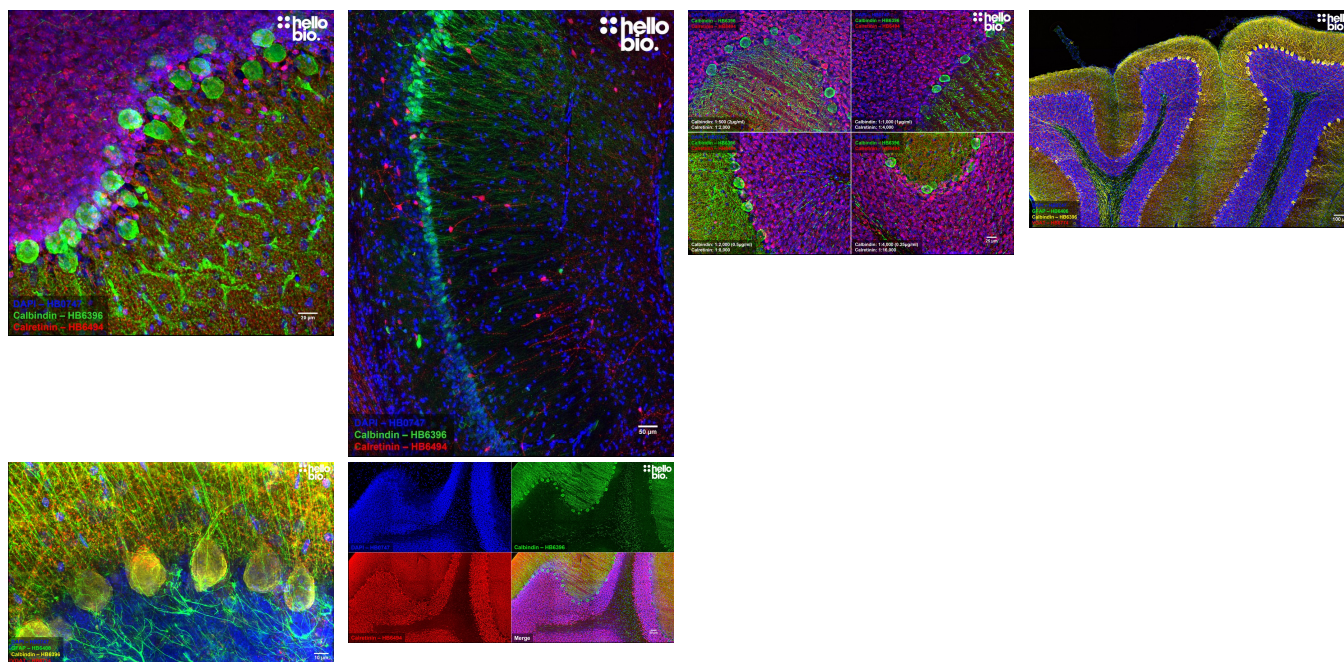
DATASHEET

Anti-Calbindin antibody ValidAb™

Product overview

Name	Anti-Calbindin antibody ValidAb™
Cat No	HB6396
Host	Mouse
Clonality	Monoclonal
Target	Calbindin
Description	Antibody to Calbindin - 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 calbindin expressed in and purified from <i>E. coli</i> .
Clone number	5A9
Isotype	IgG2a
Purification	Protein G affinity chromatography
Concentration	1mg/ml
Formulation	50% PBS, 50% glycerol + 5mM sodium azide
Predicted species reactivity	Mouse, Rat, Human, Cow
Tested species reactivity	Rat

Tested applications

Applications	IHC(IF)
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IHC(IF) optimal concentration	0.25µg/ml (1:4,000) as tested in free-floating paraformaldehyde fixed rat cerebellum sections
Positive control	Calbindin is strongly expressed in a subset of inhibitory interneurons in the brain alongside in distal tubules of the kidney.
Negative control	Calbindin expression is absent in most non-neural tissues such as in liver, muscle and lung.
Open data link	Please follow this link to OSF

Target information

Other names	CALB1, CALB, Calbindin 1, D-28K
UniProt ID	P05937
Gene name	CALB1
NCBI full gene name	calbindin 1
Entrez gene ID	793
Amino acids	261 (30.0kDa)
Isoforms	Calbindin has two described isoforms: <ul style="list-style-type: none"> • Isoform 1 (canonical) - 261 amino acids, 30.0kDa • Isoform 2 - 204 amino acids, 23.6kDa - missing amino acids 1-57 of isoform 1.
Expression	Calbindin is expressed in inhibitory interneurons in the brain with particularly high expression in the cerebellum and cortex alongside also being expressed in the kidney (collecting ducts and distal tubules) and retina.
Subcellular expression	Calbindin is primarily expressed in the cytosol of expressing cells with expression also having being reported in the nucleus.
Target function	Calbindin plays a significant role in the brain by acting as a calcium buffer, helping to regulate calcium levels within neurons and prevent excitotoxicity. It is often expressed in specific neuronal populations, where it has been implicated in modulating synaptic plasticity and neurotransmitter release. Additionally, calbindin has been shown to be involved in neuroprotection, as its expression has been linked to increased resistance to oxidative stress and protection against neurodegenerative diseases. Calbindin also has a role in vitamin D dependent movement of calcium in the kidney. Calbindin has the initiator methionine removed before forming a final conformation. Calbindin is acetylated on alanine 2.
Processing	
Post translational modifications	
Homology (compared to human)	Mouse and rat calbindin have 98.5% identity with human calbindin. Mouse and rat calbindin show 99.2% homology (S60T and T232S).
Similar proteins	In a BLAST search Calretinin (58.5% identity, 29kDa) was the only protein identified with significant homology to Calbindin.

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

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