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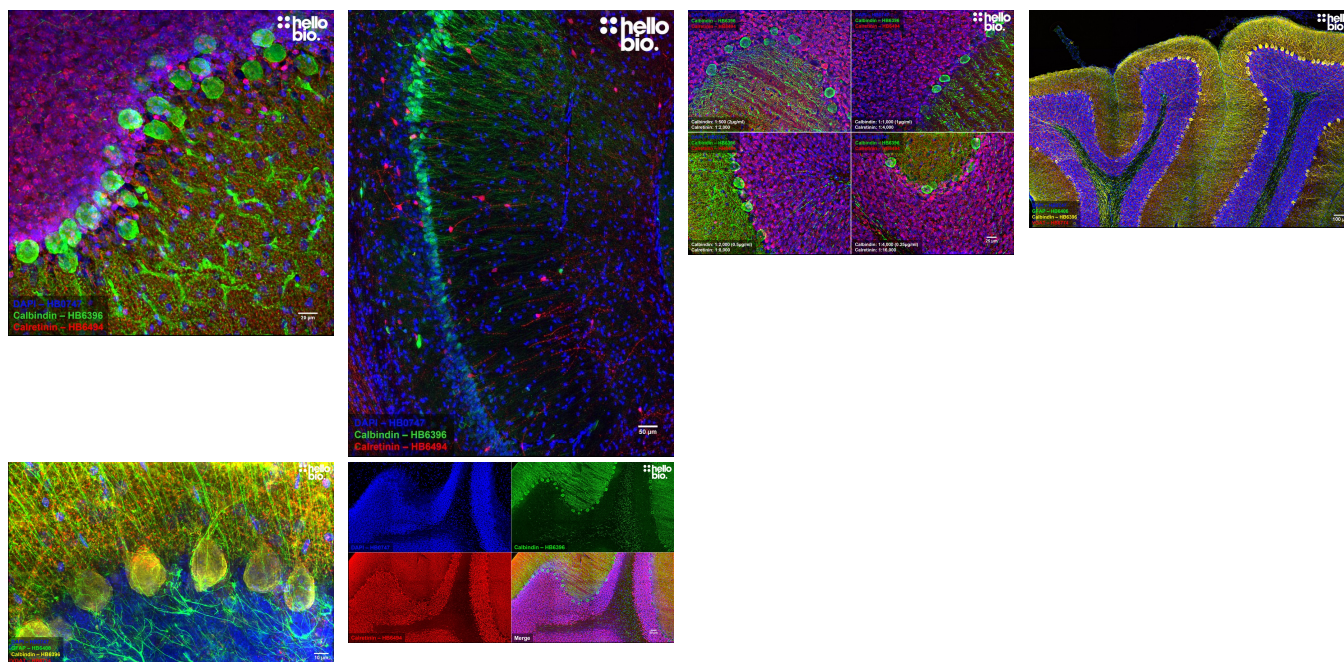
## DATASHEET

### Anti-Calbindin antibody ValidAb™

#### Product overview

|                    |   |
|--------------------|---|
| <b>Name</b>        | Anti-Calbindin antibody ValidAb™  |
| <b>Cat No</b>      | HB6396  |
| <b>Host</b>        | Mouse   |
| <b>Clonality</b>   | Monoclonal  |
| <b>Target</b>      | Calbindin   |
| <b>Description</b> | 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

|                                     |   |
|-------------------------------------|---|
| <b>Immunogen</b>                    | Recombinant human calbindin expressed in and purified from <i>E. coli</i> . |
| <b>Clone number</b>                 | 5A9   |
| <b>Isotype</b>                      | IgG2a   |
| <b>Purification</b>                 | Protein G affinity chromatography   |
| <b>Concentration</b>                | 1mg/ml  |
| <b>Formulation</b>                  | 50% PBS, 50% glycerol + 5mM sodium azide                                    |
| <b>Predicted species reactivity</b> | Mouse, Rat, Human, Cow  |
| <b>Tested species reactivity</b>    | Rat   |

#### Tested applications

|                     |         |
|---------------------|---------|
| <b>Applications</b> | IHC(IF) |
|---------------------|---------|

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

## Target information

|   |   |
|---|---|
| <b>Other names</b>                      | CALB1, CALB, Calbindin 1, D-28K   |
| <b>UniProt ID</b>                       | P05937  |
| <b>Gene name</b>                        | CALB1   |
| <b>NCBI full gene name</b>              | calbindin 1   |
| <b>Entrez gene ID</b>                   | <a href="#">793</a>   |
| <b>Amino acids</b>                      | 261 (30.0kDa)   |
| <b>Isoforms</b>                         | Calbindin has two described isoforms: <ul style="list-style-type: none"> <li>• Isoform 1 (canonical) - 261 amino acids, 30.0kDa</li> <li>• Isoform 2 - 204 amino acids, 23.6kDa - missing amino acids 1-57 of isoform 1.</li> </ul> |
| <b>Expression</b>                       | 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.        |
| <b>Subcellular expression</b>           | Calbindin is primarily expressed in the cytosol of expressing cells with expression also having being reported in the nucleus.  |
| <b>Processing</b>                       | Calbindin has the initiator methionine removed before forming a final conformation.   |
| <b>Post translational modifications</b> | Calbindin is acetylated on alanine 2.   |
| <b>Homology (compared to human)</b>     | Mouse and rat calbindin have 98.5% identity with human calbindin. Mouse and rat calbindin show 99.2% homology (S60T and T232S).   |
| <b>Similar proteins</b>                 | In a BLAST search Calretinin (58.5% identity, 29kDa) was the only protein identified with significant homology to Calbindin.  |

## 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

### Three functional facets of calbindin D-28k.

Schmidt H (2012) Frontiers in molecular neuroscience 5

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### Crucial role of calbindin-D28k in the pathogenesis of Alzheimer's disease mouse model.

Kook SY et al (2014) Cell death and differentiation 21

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### Biological actions and mechanism of action of calbindin in the process of apoptosis.

Christakos S et al (2004) The Journal of steroid biochemistry and molecular biology 89-90

**PubMedID** [15225809](#)

### Calbindin in cerebellar Purkinje cells is a critical determinant of the precision of motor coordination.

Barski JJ et al (2003) The Journal of neuroscience : the official journal of the Society for Neuroscience 23

**PubMedID** [12716955](#)

### Densities and numbers of calbindin and parvalbumin positive neurons across the rat and mouse brain.

Bjerke IE et al (2021) iScience 24

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