

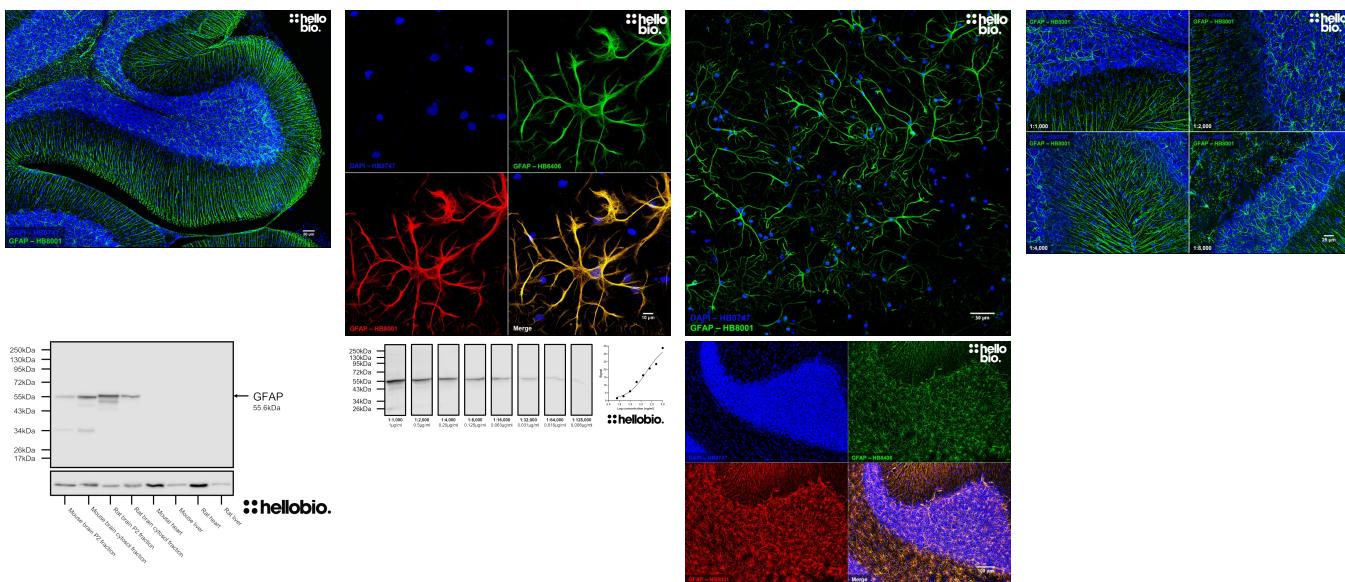
## DATASHEET

Anti-GFAP antibody ValidAb™

### Product overview

|             |   |
|-------------|---|
| Name        | Anti-GFAP antibody ValidAb™   |
| Cat No      | HB8001  |
| Host        | Rabbit  |
| Clonality   | Polyclonal  |
| Target      | GFAP  |
| Description | Antibody to GFAP - cytoskeletal protein used as an astrocyte marker. Part of the <b>ValidAb™</b> range of highly validated, data-rich antibodies. |

### Validation data



### Product information

|                              |  |
|------------------------------|--|
| Immunogen                    | Recombinant human GFAP (isoform 1) expressed in and purified from <i>E. coli</i> |
| Purification                 | Unpurified   |
| Formulation                  | Serum + 0.03% sodium azide   |
| Predicted species reactivity | Mouse, Rat, Human, Pig, Horse, Cow   |
| Tested species reactivity    | Mouse, Rat   |

### Tested applications

|              |                  |
|--------------|------------------|
| Applications | ICC, WB, IHC(IF) |
|--------------|------------------|

|   |   |
|---|---|
| <b>Western blot optimal concentration</b> | 1:32,000 dilution as tested in a rat brain cytosol preparation.   |
| <b>IHC(IF) optimal concentration</b>      | 1:4,000 dilution as tested in free-floating paraformaldehyde fixed rat brain sections   |
| <b>ICC optimal concentration</b>          | 1:2,000 dilution as tested in cultured rat neurons.   |
| <b>Positive control</b>                   | GFAP is highly expressed in neural tissues containing astrocytes. It is not widely expressed in cell lines, however it is in specific lines such as U-87 MG.  |
| <b>Negative control</b>                   | Most non-neural tissues.<br>Please note that GFAP expression has been reported in a subset of pancreatic and hepatic cells in rats and mice kidney cells. It is generally poorly expressed in common cell lines such as HeLa or HEK293. |
| <b>Open data link</b>                     | Please follow this <a href="#">link to OSF</a> .  |

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## Target information

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|---|---|
| <b>UniProt ID</b>                       | P14136  |
| <b>Gene name</b>                        | GFAP  |
| <b>NCBI full gene name</b>              | glial fibrillary acidic protein   |
| <b>Entrez gene ID</b>                   | <a href="#">2670</a>  |
| <b>Amino acids</b>                      | 432 (49.9kDa)   |
| <b>Isoforms</b>                         | GFAP has three confirmed and 21 potential isoforms. Isoform 1 (GFAP alpha): canonical, 49.9kDa; Isoform 2 (GFAP epsilon): amino acid changes between positions 391 and 432, 49.5kDa; Isoform 3 (GFAP kappa): amino acid changes between positions 391 and 432, 50.3kDa  |
| <b>Expression</b>                       | GFAP is primarily expressed within astrocytes of the central nervous system alongside also expressing in non-myelinating Schwann cells of the peripheral nervous system and satellite cells of the peripheral ganglia. GFAP expression has also been reported in Leydig cells of the testis alongside stellate cells from the pancreas and liver in rats. |
| <b>Subcellular expression</b>           | GFAP is a key cytoskeletal component therefore is widely expressed as bundles of GFAP positive fibres.  |
| <b>Target function</b>                  | GFAP is a class III intermediate filament protein with an important role in many processes beyond being a structural cytoskeletal component. GFAP is involved in mitosis of astrocytes, mediating interactions between astrocytes and neurones and repair after CNS injury.   |
| <b>Processing</b>                       | Following translation, no processing is required for GFAP to reach its active conformation.   |
| <b>Post translational modifications</b> | GFAP is subjected to numerous post-translational modifications including 9 phosphorylation sites which are the target of AURKB and ROCK1 alongside 5 separate citrullination sites.   |
| <b>Homology (compared to human)</b>     | Rat, mouse and human GFAP proteins have a 90% similarity score in a direct BLAST comparison.  |
| <b>Similar proteins</b>                 | Other type III intermediate filament proteins have homology with GFAP including Vimentin (58%), Desmin (59%) and Peripherin (56%) when assessed using BLAST.  |

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## Storage & Handling

|   |  |
|---|--|
| <b>Storage instructions</b>   | -20 °C then use reconstitution advice  |
| <b>Reconstitution advice</b>  | Upon receipt store at either -20 °C or -80 °C.   |
| For 100µg packs either:   |  |
| <ul style="list-style-type: none"><li>• Reconstitute with 100µl dH<sub>2</sub>O and store at 4 °C</li><li>• Reconstitute with 50µl dH<sub>2</sub>O and 50µl glycerol then store at -20 °C</li><li>• Reconstitute with 100µl dH<sub>2</sub>O, aliquot then snap freeze and store at -80 °C</li></ul>   |  |
| For 25µg packs either:  |  |
| <ul style="list-style-type: none"><li>• Reconstitute with 25µl dH<sub>2</sub>O and store at 4 °C</li><li>• Reconstitute with 12.5µl dH<sub>2</sub>O and 12.5µl glycerol then store at -20 °C</li><li>• Reconstitute with 25µl dH<sub>2</sub>O, aliquot then snap freeze and store at -80 °C</li></ul>   |  |
| For more information <a href="#">read our guide</a> on the best care for your product. 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. |  |
| <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

### **The role of GFAP and vimentin in learning and memory.**

Wilhelmsson U et al (2019) Biological chemistry 400

**PubMedID**

[31063456](#)

### **Importance of GFAP isoform-specific analyses in astrocytoma.**

van Bodegraven EJ et al (2019) Glia 67

**PubMedID**

[30667110](#)

### **GFAP and astrogliosis.**

Eng LF et al (1994) Brain pathology (Zurich, Switzerland) 4

**PubMedID**

[7952264](#)

### **GFAP-expressing progenitors are the principal source of constitutive neurogenesis in adult mouse forebrain.**

Garcia AD et al (2004) Nature neuroscience 7

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[15494728](#)

### **Glial fibrillary acidic protein: GFAP-thirty-one years (1969-2000).**

Eng LF et al (2000) Neurochemical research 25

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[11059815](#)