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DATASHEET

Anti-GFAP antibody $ValidAb^{TM}$

Product overview

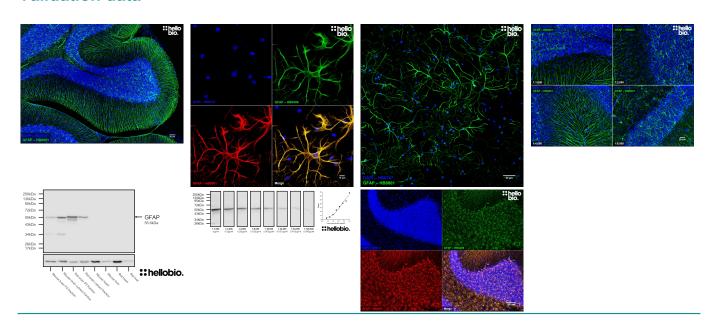
Anti-GFAP antibody ValidAbTM Name

Cat No HB8001 Host Rabbit Polyclonal Clonality **Target GFAP**

Description Antibody to GFAP - cytoskeletal protein used as an astrocyte marker. Part of the ValidAbTM range of

highly validated, data-rich antibodies.

Validation data



Product information

Recombinant human GFAP (isoform 1) expressed in and purified from E. coli Immunogen

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)

Western blot optimal 1:32,000 dilution as tested in a rat brain cytosol preparation.

concentration

IHC(IF) optimal concentration 1:4,000 dilution as tested in free-floating paraformaldehyde fixed rat brain sections

ICC optimal concentration

1:2,000 dilution as tested in cultured rat neurons.

GFAP is highly expressed in neural tissues containing astrocytes. It is not widely expressed in cell Positive control

lines, however it is in specific lines such as U-87 MG.

Negative control Most non-neural tissues.

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.

Please follow this link to OSF.

Target information

Open data link

UniProt ID P14136 Gene name **GFAP**

NCBI full gene name glial fibrillary acidic protein

Entrez gene ID 2670

Amino acids 432 (49.9kDa)

Isoforms 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

Expression 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.

Subcellular expression GFAP is a key cytoskeletal component therefore is widely expressed as bundles of GFAP positive

Target function 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 astrocytres, mediating

interactions between astrocytes and neurones and repair after CNS injury.

Processing Post translational modifications

Homology (compared to

human)

Similar proteins

Following translation, no processing is required for GFAP to reach its active conformation. 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.

Rat, mouse and human GFAP proteins have a 90% similarity score in a direct BLAST comparison.

Other type III intermediate filament proteins have homology with GFAP including Vimentin (58%),

Desmin (59%) and Peripherin (56%) when assessed using BLAST.

Storage & Handling

Storage instructions Reconstitution advice

-20°C then use reconstitution advice Upon receipt store at either -20°C or -80°C.

For 100µg packs either:

- Reconstitute with 100µl dH₂O and store at 4°C
- Reconstitute with 50µl dH₂O and 50µl glycerol then store at -20°C
- Reconstitute with 100µl dH2O, aliquot then snap freeze and store at -80°C

For 25µg packs either:

- Reconstitute with 25µl dH2O and store at 4°C
- Reconstitute with 12.5µl dH₂O and 12.5µl glycerol then store at -20°C
- Reconstitute with 25µl dH₂O, aliquot then snap freeze and store at -80°C

For more information read our guide 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. **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 GFAP and vimentin in learning and memory.

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Importance of GFAP isoform-specific analyses in astrocytoma.

van Bodegraven EJ et al (2019) Glia 67 **PubMedID** 30667110

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

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

Garcia AD et al (2004) Nature neuroscience 7 **PubMedID** 15494728

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

Eng LF et al (2000) Neurochemical research 25 **PubMedID**11059815