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DATASHEET

Anti-GFAP antibody $ValidAb^{TM}$

Product overview

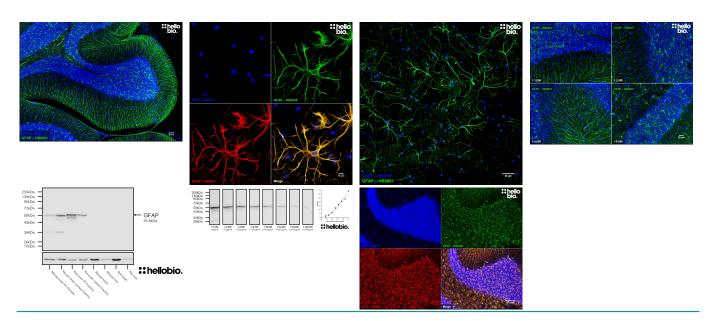
Name Anti-GFAP antibody ValidAbTM

Cat NoHB8001HostRabbitClonalityPolyclonalTargetGFAP

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

highly validated, data-rich antibodies.

Validation data



Product information

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

Purification Unpurified

Formulation Lyophilised. When reconstituted contains 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.

Positive control 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.

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.

Open data link Please follow this link to OSF.

Target information

UniProt ID P14136 Gene name **GFAP**

NCBI full gene name glial fibrillary acidic protein

Entrez gene ID

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

GFAP is a class III intermediate filament protein with an important role in many processes beyond **Target function**

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.

Shipping Conditions Important

Stable for ambient temperature shipping. Follow storage instructions on receipt. 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.

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 **PubMedID** 15494728

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

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