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DATASHEET

Anti-GFAP antibody ValidAb™

Product overview

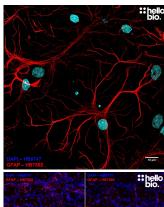
Name Anti-GFAP antibody ValidAbTM

Cat NoHB7592HostGoatClonalityPolyclonalTargetGFAP

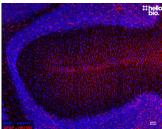
Description Antibody to GFAP - cytoskeletal protein used as an astrocyte marker. Part of the ValidAb™ range of

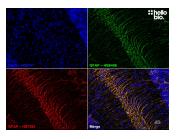
highly validated, data-rich antibodies.

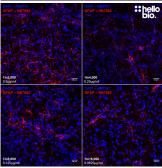
Validation data











Product information

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

Purification Immunogen affinity purification

Concentration 1mg/ml

Formulation 50% PBS, 50% glycerol + 5mM sodium azide

Predicted species reactivity Mouse, Rat, Human

Tested species reactivity Mouse, Rat

Tested applications

Applications IHC(IF) optimal concentration

ICC, IHC(IF)

 $\textbf{IHC(IF) optimal concentration} \quad 0.5 \mu \text{g/ml (1:2,000 dilution) as tested in free-floating paraformal dehyde fixed rat brain sections}$

ICC optimal concentration 0.5µg/ml (1:2,000 dilution) as tested in cultured rat neurones

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**

glial fibrillary acidic protein NCBI full gene name

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

fibres.

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.

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

GFAP is subjected to numerous post-translational modifications including 9 phosphorylation sites Post translational

modifications 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.

Homology (compared to

human)

Similar proteins 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 **Shipping Conditions**

Important

-20°C On ice

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not

for human or veterinary use

References

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

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

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

Importance of GFAP isoform-specific analyses in astrocytoma.

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

The role of GFAP and vimentin in learning and memory.

Wilhelmsson U et al (2019) Biological chemistry 400