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# **DATASHEET**

Anti-GFAP antibody ValidAb™

### **Product overview**

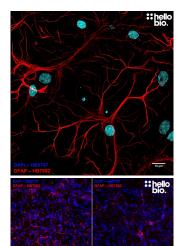
Name Anti-GFAP antibody ValidAb™

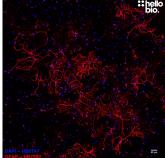
Cat No HB7592 Host Goat Clonality Polyclonal **Target GFAP** 

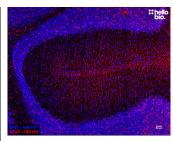
Description Antibody to GFAP - cytoskeletal protein used as an astrocyte marker. Part of the ValidAb<sup>TM</sup> range of

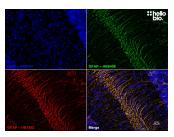
highly validated, data-rich antibodies.

### 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**

ICC optimal concentration

**Applications** 

ICC, IHC(IF)

IHC(IF) optimal concentration 0.5µg/ml (1:2,000 dilution) as tested in free-floating paraformaldehyde fixed rat brain sections

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** 

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

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.

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

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

which are the target of AURKB and ROCK1 alongside 5 separate citrullination sites.

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

human)

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

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

# Storage & Handling

Storage instructions

-20°C

**Important** 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

**PubMedID** 31063456

