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DATASHEET

Anti-GFAP antibody ValidAbTM

Product overview

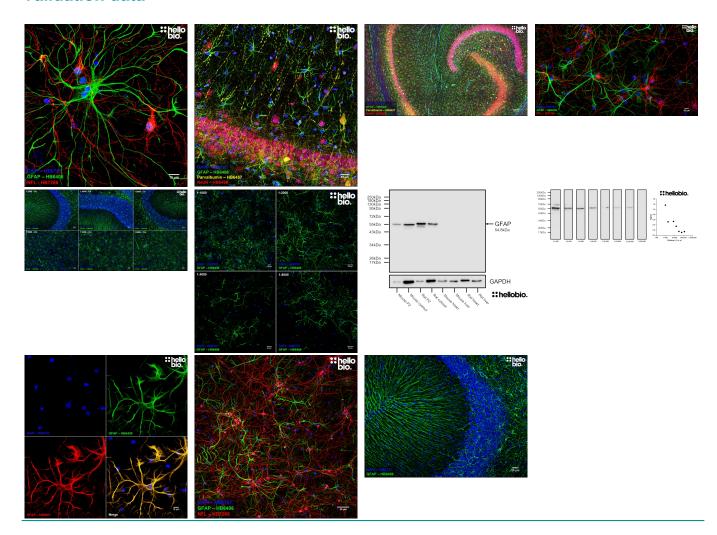
Name Anti-GFAP antibody ValidAbTM

Cat No HB6406
Host Chicken
Clonality Polyclonal
Target GFAP

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

ImmunogenRecombinant human GFAP (isoform 1) expressed in and purified from E. coliIsotypeIgYPurificationUnpurified

Formulation Lyophilised. When reconstituted contains IgY preparation with 5mM sodium azide and 1%

recombinant BSA.

Predicted species reactivity

Mouse, Rat, Human, Pig, Horse, Cow

Tested species reactivity Mouse, Rat

Tested applications

ICC, WB, IHC(IF) **Applications**

1:8,000 dilution as tested in a rat brain cytosol preparation. Western blot optimal

concentration

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

1:8,000 dilution as tested in cultured rat neurones. ICC optimal concentration

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)

GFAP has three confirmed and 21 potential isoforms. Isoform 1 (GFAP alpha): canonical, 49.9kDa; Isoforms

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 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.

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 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

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

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

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

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

GFAP and astrogliosis.

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

PubMedID 7952264

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