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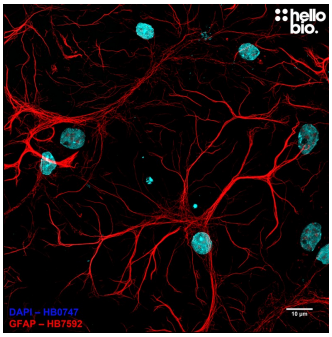
DATASHEET

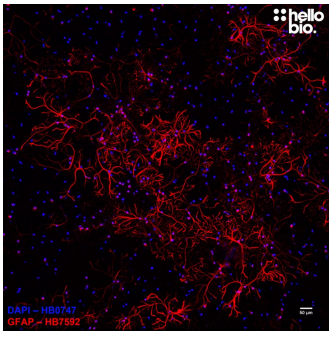
Anti-GFAP antibody ValidAb™

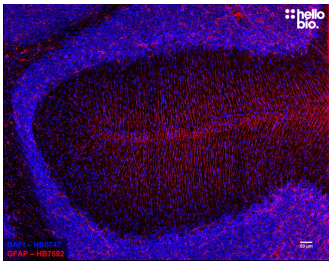
Product overview

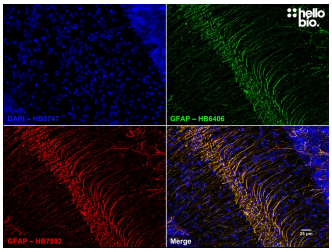
Name	Anti-GFAP antibody ValidAb™
Cat No	HB7592
Host	Goat
Clonality	Polyclonal
Target	GFAP
Description	Antibody to GFAP - cytoskeletal protein used as an astrocyte marker. Part of the ValidAb™ range of highly validated, data-rich antibodies.

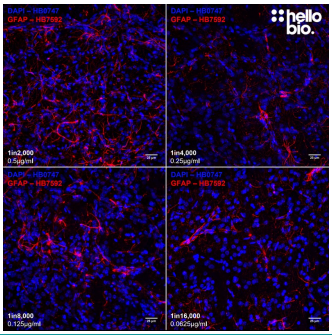
Validation data











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	ICC, IHC(IF)
IHC(IF) optimal concentration	0.5µg/ml (1:2,000 dilution) as tested in free-floating paraformaldehyde 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
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.
Processing	Following translation, no processing is required for GFAP to reach its active conformation.
Post translational modifications	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.
Homology (compared to human)	Rat, mouse and human GFAP proteins have a 90% similarity score in a direct BLAST comparison.
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	-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).

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PubMedID 11059815

GFAP and astrogliosis.

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

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