Hello Bio, Inc.
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500
F. 609-228-4994

customercare-usa@hellobio.com

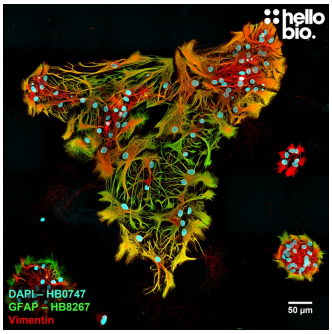
DATASHEET

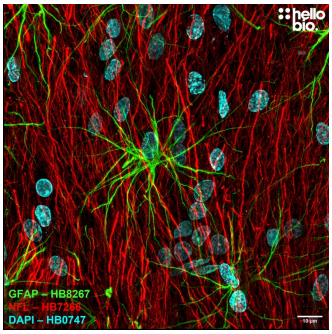
Anti-GFAP antibody ValidAb™

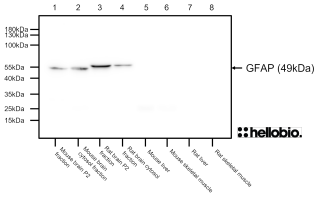
Product overview

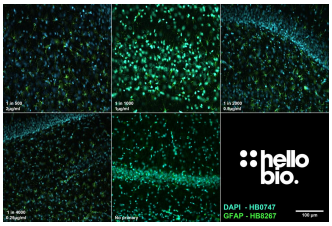
Name	Anti-GFAP antibody ValidAb™
Cat No	HB8267
Host	Mouse
Clonality	Monoclonal
Target	GFAP
Description	Antibody to GFAP - cytoskeletal protein used as an astrocyte marker. Part of the ValidAb™ range of highly validated, data-rich antibodies.

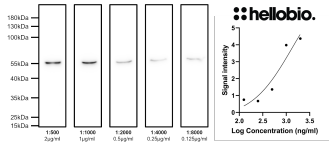
Validation data

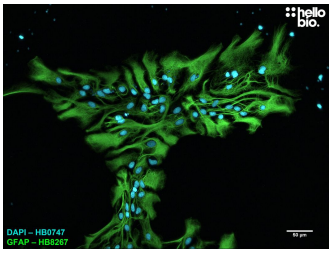


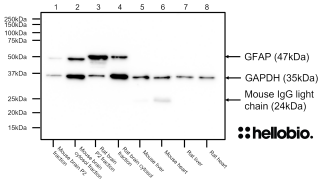


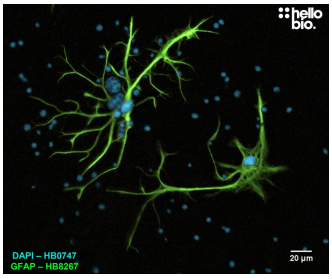


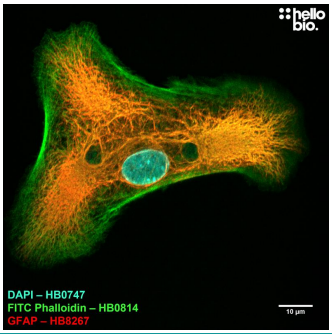


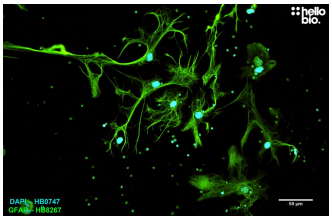


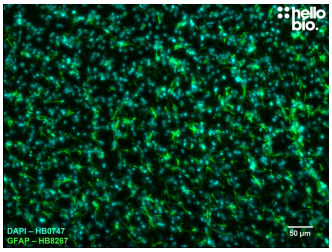












Product information

Immunogen	GFAP purified from porcine spinal cord
Clone number	GA-5
Isotype	IgG1
Purification	Protein A affinity chromatography
Concentration	1mg/ml
Formulation	Lyophilised. When reconstituted contains PBS with 15mM sodium azide and 1% recombinant albumin

Predicted species reactivity	Human, Mouse, Rat, Pig
Tested species reactivity	Mouse, Rat

Tested applications

Applications	ICC, WB, IHC(IF)
Western blot optimal concentration	1µg/ml (1:1000) as measured in rat brain cytosol
IHC(IF) optimal concentration	1µg/ml (1:1000) as measured in free-floating paraformaldehyde fixed hippocampal sections
ICC optimal concentration	1µg/ml (1:1000) as measured in PFA fixed mixed neuronal cultures.
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

Other names	glial fibrillary acidic protein, ALXDRD
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 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 then use reconstitution advice
Reconstitution advice	Upon receipt store at either -20°C or -80°C.

For 100µg packs either:

- Reconstitute with 100µl dH_2O and store at 4°C
- Reconstitute with 50µl dH_2O and 50µl glycerol then store at -20°C
- Reconstitute with 100µl dH_2O, aliquot then snap freeze and store at -80°C

For 25µg packs either:

- Reconstitute with 25µl dH_2O and store at 4°C
- Reconstitute with 12.5µl dH_2O and 12.5µl glycerol then store at -20°C
- Reconstitute with 25µl dH_2O, 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	Stable for ambient temperature shipping. Follow storage instructions on receipt.
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, Ghirnikar RS and Lee YL (2000) Neurochem Res 25(9-10)
PubMedID 11059815

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

Garcia A et al (2004) Nature Neuroscience 7(11)
PubMedID 15494728

GFAP and astrogliosis

Eng LF and Ghirnikar RS (1994) Brain Pathol 4(3)
PubMedID 7952264

Cell-type-specific markers for distinguishing and studying neurons and the major classes of glial cells in culture

Raff MC et al (1979) Brain Res 174(2)
PubMedID 385109

Importance of GFAP isoform-specific analyses in astrocytoma

Van Bodegraven et al (2019) Glia 67(8)
PubMedID 30667110

Astrocytes: biology and pathology

Sofroniew M and Vinters H (2010) Acta Neuropathologica 119(1)
PubMedID 20012068