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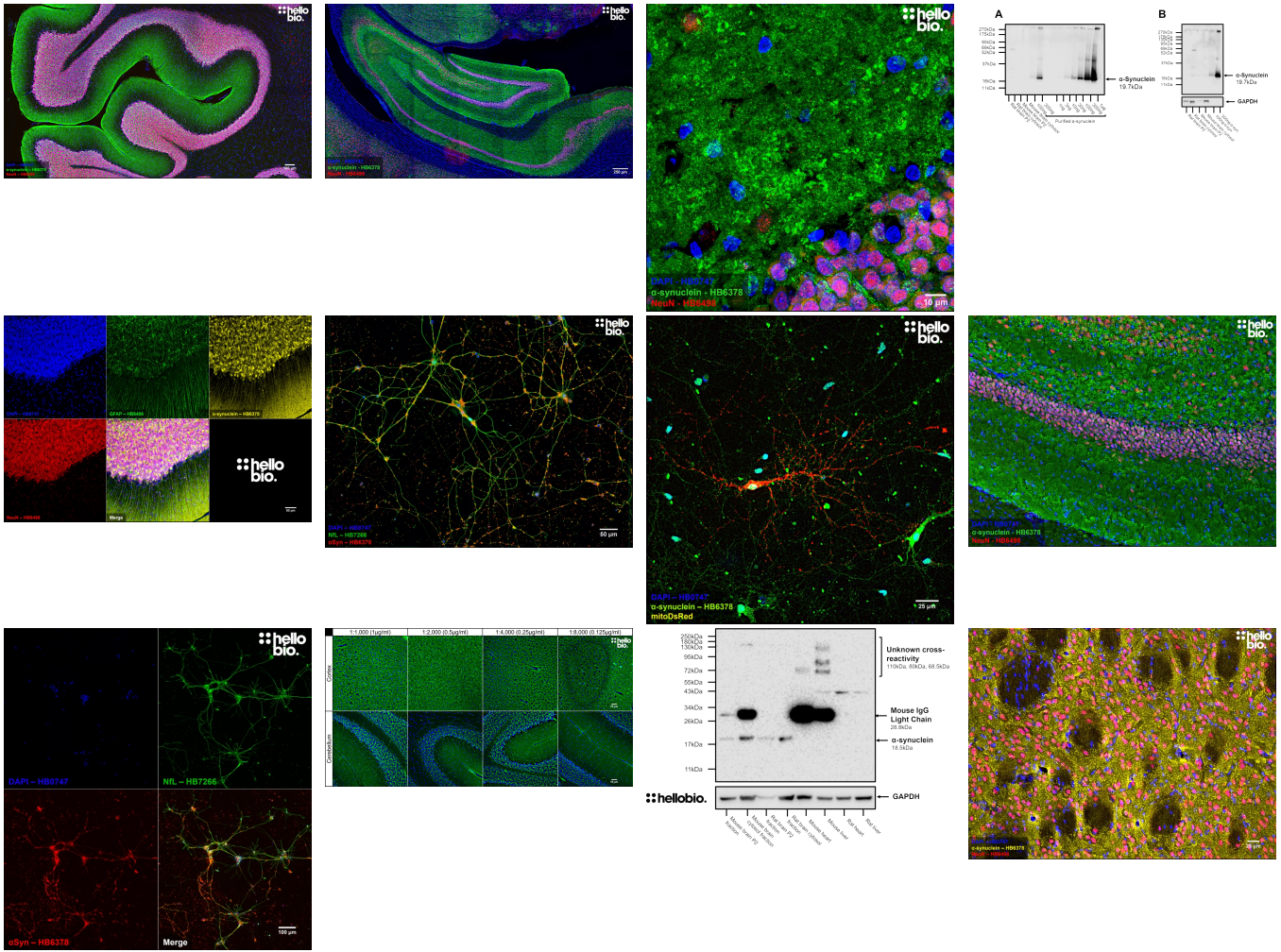
DATASHEET

Anti- α -Synuclein antibody ValidAb™

Product overview

Name	Anti- α -Synuclein antibody ValidAb™
Cat No	HB6378
Host	Mouse
Clonality	Monoclonal
Target	α -Synuclein
Description	Antibody to Alpha-Synuclein - synaptic protein involved in neurodegeneration. Part of the ValidAb™ range of highly validated, data-rich antibodies.

Validation data



Product information

Immunogen	Human recombinant alpha-synuclein expressed in and purified from <i>E. coli</i>
Epitope	Localized to within residues 61 to 95 of human alpha-synuclein
Clone number	2A7
Isotype	IgG1
Purification	Protein A affinity chromatography
Concentration	1mg/ml
Formulation	50% PBS, 50% glycerol + 5mM sodium azide
Predicted species reactivity	Mouse, Rat, Human, Pig, Cow
Tested species reactivity	Mouse, Rat

Tested applications

Applications	ICC, IHC(IF)
IHC(IF) optimal concentration	1µg/ml (1:1,000) as tested in 4% PFA fixed rat brain slices
ICC optimal concentration	1µg/ml (1:1,000) as tested in cultured rat hippocampal neurons
Positive control	Any neural tissue will express α-Synuclein in the presynaptic terminals of neurons
Negative control	Any non-neural tissue (e.g. liver) or standard cell lines such as HEK293T or HeLa
Open data link	Please follow this link to OSF

Target information

Other names	aSyn, Non-A beta component of AD amyloid, Non-A4 component of amyloid precursor (NACP)
UniProt ID	P37840
Gene name	SNCA
NCBI full gene name	synuclein alpha
Entrez gene ID	6622
Amino acids	140 (14.5kDa)
Isoforms	α-Synuclein has three known isoforms: <ul style="list-style-type: none"> • Isoform 1 (NACP140), canonical sequence, 140aa, 14.5kDa • Isoform 2 (NACP112), missing aa 103-130, 11.3kDa • Isoform 3, missing aa 41-54, 13.1kDa
Expression	α-Synuclein is highly expressed in the nervous system and is believed to consist of up to 1% of total cytosolic protein in the brain. α-Synuclein is expressed within neurons where it localises to pre-synaptic terminals with much lower levels of cell body expression. Outside of the nervous system, α-Synuclein is also expressed at significant levels in erythrocytes and platelets.
Subcellular expression	α-Synuclein is a soluble cytosolic protein that predominantly localises to pre-synaptic terminals. Additionally, more recent evidence has suggested that α-Synuclein also localises to mitochondrial membranes.
Target function	α-Synuclein has important roles in normal physiology where it is involved in the regulation of synaptic vesicles. As part of this it has been suggested that α-Synuclein regulates vesicle recycling alongside regulating dopamine release. Additionally α-Synuclein is been implicated in modulation of DNA repair, especially double strand breaks.

Other names	<p>aSyn, Non-A beta component of AD amyloid, Non-A4 component of amyloid precursor (NACP)</p> <p>α-Synuclein is however more well known for its contribution to neurodegenerative diseases through its ability to misfold and then aggregate to cause insoluble plaques.</p>
Processing	α -Synuclein is not subject to processing before reaching an active conformation
Post translational modifications	α -Synuclein is subject to phosphorylation upon multiple residues including on tyrosines 39 and 125 alongside serines 42, 87 and 129.
Homology (compared to human)	In a BLAST search using the full protein sequence the following homologues were identified in the following species:
Similar proteins	<ul style="list-style-type: none"> • Rat - 95.0% homology • Mouse - 95.0% homology • Macaque - 98.6% homology <p>In a BLAST search using the full protein sequence the only proteins with significant homology to α-Synuclein were:</p>
Epitope homology (between species)	<ul style="list-style-type: none"> • β-synuclein - 58.0% homology • γ-synuclein - 62.7% homology <p>In a BLAST search using the epitope sequence the α-Synuclein homologues from the following species showed the following homologies:</p>
Epitope homology (other proteins)	<ul style="list-style-type: none"> • Orangutan, Patas monkey: 100% • Macaque, Tamarin, Rat, Mouse: 97.14% • Cow / Pig: 97.06% • Spider Monkey: 94.3% • Canary: 91.4% <p>In a BLAST search using the epitope sequence only α-Synuclein was identified as having significant homology.</p>

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

α -Synuclein in Parkinson's disease.

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Novel subcellular localization for α -synuclein: possible functional consequences.

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Gómez-Benito M et al (2020) Frontiers in pharmacology 11

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dysfunction.

Calabresi P et al (2023) Cell death & disease 14

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