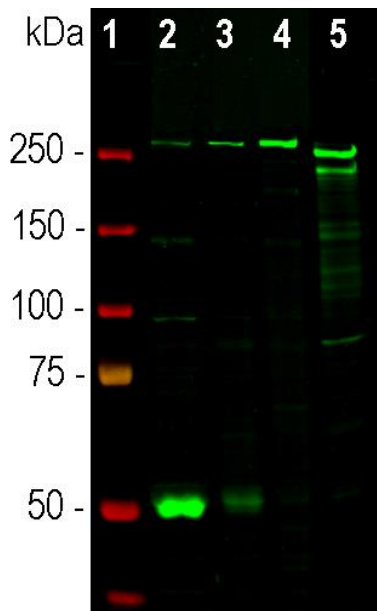
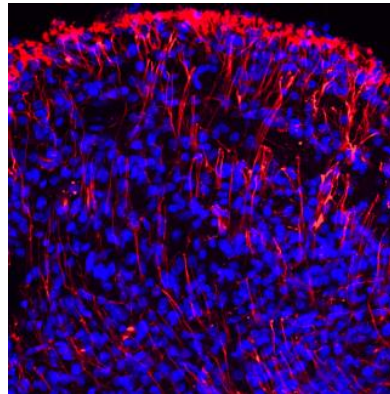

Product name:	Nestin
Cat number:	AB-10702
Conjugate:	Unconjugated
Size:	100 ul
Clone:	POLY
Concentration:	1mg/ml
Host:	Ch
Isotype:	IgG
Immunogen:	Recombinant construct, amino acids 317-630 of the human protein expressed in and purified from E. coli.
Reactivity:	Hu, Ms,Rt
Applications:	IF: 1:250-1:500, ICC: 1:250-1:500, IHC: 1:250-1:500, WB: 1:2,000
Molecular Weight:	~240kDa
Purification:	Aff. Pur.
Form:	Liquid
Buffer:	5mM sodium azide
Storage:	Stable at 4°C for several months. For longer term store at -20°C, minimize freeze/thaw cycles.

Background:

Nestin is a member of the class IV intermediate filament protein family which is expressed in neuroepithelial stem cells, which is the origin of the name nestin. Nestin was originally identified as a result of the production of a series of monoclonal antibodies directed against epitopes expressed on formalin fixed embryo day 15 rat spinal cord tissue (1). One of these antibodies, called Rat 401, stained fibrous profiles in the developing nervous system, but not in the mature nervous system. By screening bacteriophage expression libraries with the Rat 401 antibody, Lendahl et al. (2) were able to isolate a cDNA encoding the protein to which Rat 401 antibody bound. The protein proved to be an unusual member of the intermediate filament family, containing an α -helical region homologous to that found in keratin and neurofilament subunits. The nestin protein has a very short non-helical Nterminal region followed by the α -helical region and a very long and repetitive C-terminal region. Nestin is expressed by radial glia and other types of dividing cells in the developing central and peripheral nervous systems and in developing muscle. Nestin is expressed in many types of brain tumor in particular in gliomas (3,4). Nestin is also a marker of stem cells in the pancreas (4) and heart (5) and reactive astrocytes following CNS injury (6). In the mature brain, nestin is useful as a marker of resident stem cells, particularly in the dentate gyrus of the hippocampus and the olfactory bulb. The nestin amino acid sequence is relatively poorly conserved in protein sequence across species boundaries, so that the mouse and human proteins have an overall identity of only 62%. As a result, antibodies to the human protein often fail to recognize the rodent homologue and vice versa. However this antibody works well on both human and rodent cells and tissues. The Nestin antibody was made against a purified recombinant construct corresponding to amino acids 317-630 of the human protein, a region of the C-terminal "tail" region of the molecule, see NCBI entr. Although this region is relatively poorly conserved across species boundaries the Nestin antibody is cross-reactive with both rodent and human nestin.



Western blot analysis analysis of tissue and cell lysates using chicken pAb to nestin, Nest, dilution 1:2,000 in green: [1] protein standard, [2] embryonic day 18 rat brain, [3] rat cortical neuron-glia cell culture, [4] C6 and [5] SH-SY5Y cells. The high molecular weight bands correspond to Nestin protein.



Immunofluorescent analysis of rat embryonic (E18) brain stained with chicken pAb to nestin, Nestin, dilution 1:500 in red. Blue is Hoechst staining of nuclear DNA. Nestin antibody produces strong staining of the developing radial glia and astrocytes and their processes.