

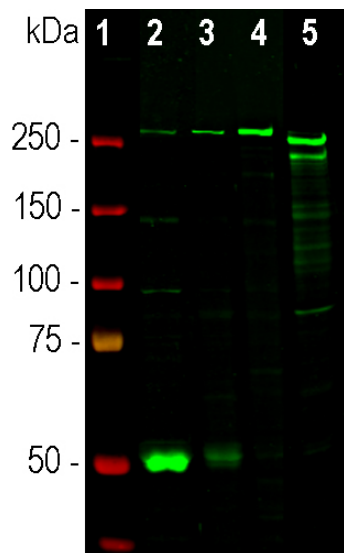
Ordering Information
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HGNC Name: NES
UniProt: P48681
RRID: AB_2737583
Immunogen: Recombinant construct, amino acids 317-630 of the human protein expressed in and purified from *E. coli*.
Format: Concentrated IgY preparation in PBS plus 0.02% Na₂S₂O₃
Storage: Store at 4°C.
Recommended dilutions:
WB: 1:5,000, IF/ICC 1:1,000-1:2,000, IHC: :20,000

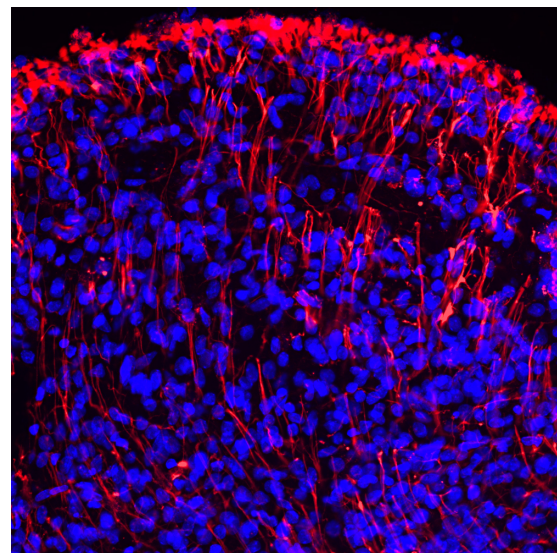
References:

1. Lendahl U, Zimmerman LB, McKay RD. CNS stem cells express a new class of intermediate filament protein. *Cell* 60:585-95 (1990).
2. Hockfield S, McKay RD. Identification of major cell classes in the developing mammalian nervous system. *J. Neurosci.* 5:3310-28 (1985).
3. Tohyama T. et al. Nestin expression in embryonic human neuroepithelium and in human neuroepithelial tumor cells. *Lab. Invest.* 66:303-13 (1992).
4. Neradi J, Veselska R. Nestin as a marker of cancer stem cells. *Cancer Sci.* 106:803-11 (2015).
5. Zulewski H, et al. Multipotential Nestin-Positive Stem Cells Isolated From Adult Pancreatic Islets Differentiate Ex Vivo Into Pancreatic Endocrine, Exocrine, and Hepatic Phenotypes. *Diabetes* 50:521-33 (2001).
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7. Clarke SR, Shetty AK, Bradley JL, Turner DA Reactive astrocytes express the embryonic intermediate neurofilament nestin. *Neuroreport* 5:1885-8 (1994).
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Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Chicken		~240kDa by SDS-PAGE	Hu, Rt, Ms



Western blot analysis of tissue and cell lysates using chicken pAb to nestin, CPCA-Nest, dilution 1:5,000 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, CPCA-Nest, dilution 1:2,000 in red. Blue is Hoechst staining of nuclear DNA. CPCA-Nestin antibody produces strong staining of the developing radial glia and astrocytes and their processes.

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 N-terminal 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 CPCA-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 entry [NP_006608.1](https://www.ncbi.nlm.nih.gov/nuccore/NP_006608.1). Although this region is relatively poorly conserved across species boundaries the CPCA-Nestin antibody is cross-reactive with both rodent and human nestin. The antibody can be used for IF, ICC and IHC, for the later see data under the "Additional Info" tag. We also supply a mouse monoclonal and a rabbit polyclonal antibody to the same recombinant human construct, [MCA-4D11](#) and [RPCA-Nestin](#) respectively.

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Abbreviation Key:

mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Co—Cow Pi—Pig Ho—Horse Ch—Chicken Dr—D. rerio Dm—D. melanogaster Sm—S. mutans Ce—C. elegans Sc—S. cerevisiae Sa—S. aureus Ec—E. coli.