

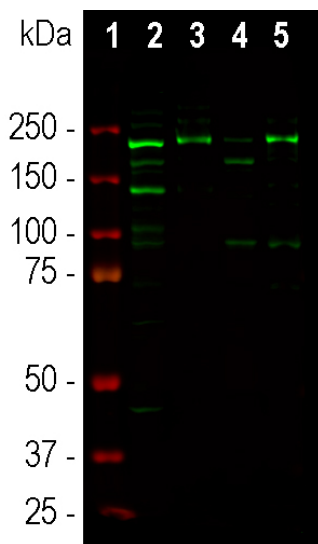
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**HGNC Name:** ANK3  
**UniProt:** Q12955  
**RRID:** AB\_2737592  
**Immunogen:** The C-terminal 398 amino acids of human ankyrin 3 expressed in and purified from *E. coli*  
**Format:** Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaCl  
**Storage:** Store at 4°C for one year, for longer term store at -20°C  
**Recommended dilutions:**  
 WB: 1:500. IF/ICC 1:1,000

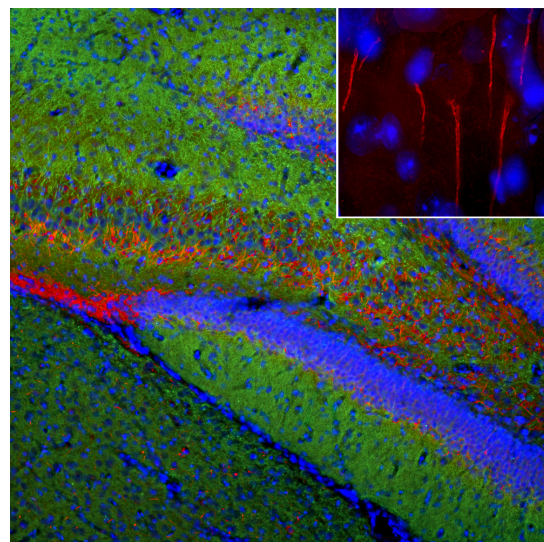
### References:

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Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC	Rabbit		480, 270, and 190kDa	Hu, Rt, Ms



Western blot analysis of different tissue lysates using rabbit pAb to ankyrin 3, RPCA-ANK3, dilution 1:1,000 in green: [1] protein standard (red), [2] rat cortex, [3] rat cortex membrane enriched fraction, [4] mouse cortex and [5] mouse cortex membrane enriched fraction. The band at ~190kDa correspond to one of the three high molecular weight forms of ankyrin 3, the 270kDa and 480kDa isoforms can be seen on longer exposure of the blot.



Immunofluorescent analysis of a rat brain section stained with rabbit pAb to ankyrin 3, RPCA-ANK3, dilution 1:1,000, in red and costained with mouse mAb to MAP2, MCA-2C4, dilution 1:5,000 in green. The blue is Hoechst staining of nuclear DNA. Following transcardial perfusion of rat with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45µm, and free-floating sections were stained with above antibodies. The RPCA-ANK3 antibody stains axonal initial segments, while the MCA-2C4 antibody labels MAP2 protein expressed in the perikarya and dendrites of most neurons.

### Background:

The first ankyrin protein was isolated from red blood cell membranes and was found to be responsible for anchoring the spectrin cytoskeleton to the plasma membrane. Subsequently this protein was named ankyrin 1 and a close homolog was named ankyrin 2, though the two proteins are also known as ankyrin R and ankyrin B, for erythrocyte and brain respectively (2). Both proteins are large at about 200kDa. A third member of the protein family was discovered and called ankyrin 3, also known as ankyrin G, some forms of which are much larger in molecular size, up to 480kDa. G refers to giant or general, as this protein is large and widely expressed (2). All three ankyrins have an N-terminal segment composed of 22 tandem repeats each of 33 amino acids which have been named **ankyrin type repeats**. A subset of these repeats are responsible for binding the ankyrin proteins to various membrane proteins, and repeats of this kind are found in many other proteins and generally mediate specific protein-protein interactions (3). The middle region of the molecules contain the spectrin binding activity and the C-terminal contains a **DEATH** domain and some other sequence which is variable between the three ankyrins. DEATH domains are involved in activating apoptotic pathways, and are found in many molecules of known apoptotic function such as the TNF receptor and Fas/Apo1 (4). The much larger size of ankyrin 3 is due to a sequence which may be inserted within this C-terminal region. The ankyrin 3 gene may produce a protein of 480kDa while other transcripts produce 270kDa and 190kDa proteins. Defects in the ankyrin gene are associated with various human disorders (5,6). Ankyrin 3 is expressed in the axon initial segment and the nodes of Ranvier in the nervous system so appropriate antibodies are useful to identify these regions (7). The function of ankyrin 3 appears to be to specifically localize channels and other cytoskeletal proteins at these regions.

The RPCA-ANK3 antibody was made against the C-terminal 398 amino acid of human isotype 1 in [NP\\_066267.2](#). This segment is expressed by all ankyrin 3 three isotypes and contains the DEATH domain sequence. EnCor also supplies a mouse monoclonal and a chicken polyclonal to this protein, [MCA-2A8](#) and [CPCA-ANK3](#).

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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*.

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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.*