

### Anti-NRG1 antibody ab53104

[13 References](#) [3 Images](#)

#### Overview

<b>Product name</b>	Anti-NRG1 antibody
<b>Description</b>	Rabbit polyclonal to NRG1
<b>Host species</b>	Rabbit
<b>Specificity</b>	ab53104 detects endogenous levels of isoform 10 of the NRG1 protein.
<b>Tested applications</b>	<b>Suitable for:</b> ICC/IF, WB, IHC-P
<b>Species reactivity</b>	<b>Reacts with:</b> Human
<b>Immunogen</b>	A synthetic peptide derived from human NRG1.
<b>General notes</b>	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&amp;As</p>

#### Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at -20°C. Stable for 12 months at -20°C.
<b>Storage buffer</b>	<p>pH: 7.40</p> <p>Preservative: 0.02% Sodium azide</p> <p>Constituents: 50% Glycerol, 0.87% Sodium chloride, PBS</p> <p>Without Mg+2 and Ca+2</p>
<b>Purity</b>	Immunogen affinity purified
<b>Purification notes</b>	ab53104 was affinity purified from rabbit antiserum by affinity chromatography using epitope-specific immunogen.
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	IgG

## Applications

### The Abpromise guarantee

Our **Abpromise guarantee** covers the use of ab53104 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
ICC/IF		Use a concentration of 5 µg/ml.
WB		1/300 - 1/1000. Detects a band of approximately 105 kDa.
IHC-P		Use at an assay dependent concentration.

## Target

### Function

Direct ligand for ERBB3 and ERBB4 tyrosine kinase receptors. Concomitantly recruits ERBB1 and ERBB2 coreceptors, resulting in ligand-stimulated tyrosine phosphorylation and activation of the ERBB receptors. The multiple isoforms perform diverse functions such as inducing growth and differentiation of epithelial, glial, neuronal, and skeletal muscle cells; inducing expression of acetylcholine receptor in synaptic vesicles during the formation of the neuromuscular junction; stimulating lobuloalveolar budding and milk production in the mammary gland and inducing differentiation of mammary tumor cells; stimulating Schwann cell proliferation; implication in the development of the myocardium such as trabeculation of the developing heart. Isoform 10 may play a role in motor and sensory neuron development.

### Tissue specificity

Type I isoforms are the predominant forms expressed in the endocardium. Isoform alpha is expressed in breast, ovary, testis, prostate, heart, skeletal muscle, lung, placenta liver, kidney, salivary gland, small intestine and brain, but not in uterus, stomach, pancreas, and spleen. Isoform 3 is the predominant form in mesenchymal cells and in non-neuronal organs, whereas isoform 6 is the major neuronal form. Isoform 8 is expressed in spinal cord and brain. Isoform 9 is the major form in skeletal muscle cells; in the nervous system it is expressed in spinal cord and brain. Also detected in adult heart, placenta, lung, liver, kidney, and pancreas. Isoform 10 is expressed in nervous system: spinal cord motor neurons, dorsal root ganglion neurons, and brain. Predominant isoform expressed in sensory and motor neurons. Not detected in adult heart, placenta, lung, liver, skeletal muscle, kidney, and pancreas. Not expressed in fetal lung, liver and kidney. Type IV isoforms are brain-specific.

### Involvement in disease

Note=A chromosomal aberration involving NRG1 produces gamma-heregulin. Translocation t(8;11) with ODZ4. The translocation fuses the 5'-end of ODZ4 to NRG1 (isoform 8). The product of this translocation was first thought to be an alternatively spliced isoform. Gamma-heregulin is a soluble activating ligand for the ERBB2-ERBB3 receptor complex and acts as an autocrine growth factor in a specific breast cancer cell line (MDA-MB-175). Not detected in breast carcinoma samples, including ductal, lobular, medullary, and mucinous histological types, neither in other breast cancer cell lines.

### Sequence similarities

Belongs to the neuregulin family.  
Contains 1 EGF-like domain.  
Contains 1 Ig-like C2-type (immunoglobulin-like) domain.

### Developmental stage

Detectable at early embryonic ages. Isoform 10 is highly expressed in developing spinal motor neurons and in developing cranial nerve nuclei. Expression is maintained only in both adult motor neurons and dorsal root ganglion neurons. Type IV isoforms are expressed in fetal brain.

### Domain

The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic

processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization.

ERBB receptor binding is elicited entirely by the EGF-like domain.

## Post-translational modifications

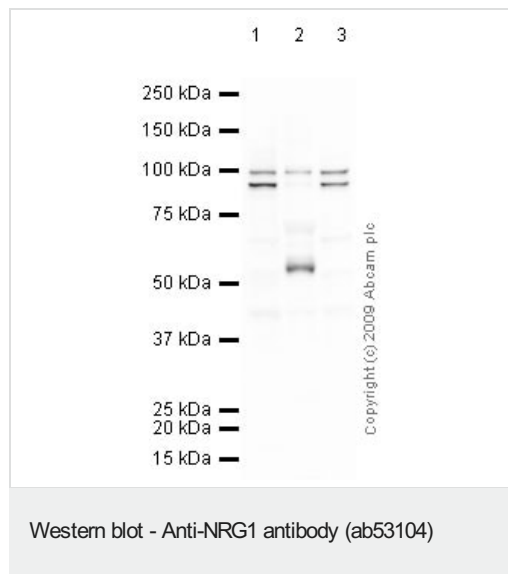
Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form.

N- and O-glycosylated. Extensive glycosylation precedes the proteolytic cleavage.

## Cellular localization

Secreted; Cell membrane. Does not seem to be active; Membrane. May possess an internal uncleaved signal sequence; Nucleus. May be nuclear and Secreted. Has a signal peptide.

## Images



**All lanes :** Anti-NRG1 antibody (ab53104) at 1/500 dilution

**Lane 1 :** SK-N-SH (Human neuroblastoma) Whole Cell Lysate

**Lane 2 :** Human placenta tissue lysate - total protein ([ab29745](#))

**Lane 3 :** HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate

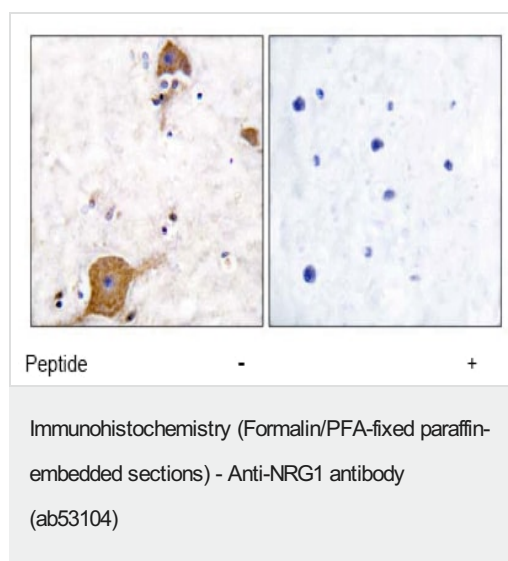
Lysates/proteins at 10 µg per lane.

### Secondary

**All lanes :** Goat polyclonal to Rabbit IgG - H&L - Pre-Adsorbed (HRP) at 1/3000 dilution

**Observed band size:** 100 kDa

**Additional bands at:** 55 kDa (possible isoform), 90 kDa (possible isoform)



ab53104 at 1/50 dilution staining NRG1 in human brain tissue by Immunohistochemistry, Paraffin embedded tissue, in the absence and presence of the immunising peptide.

Immunocytochemistry/ Immunofluorescence - Anti-  
NRG1 antibody (ab53104)

ICC/IF image of ab53104 stained MCF7 cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab53104, 5µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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