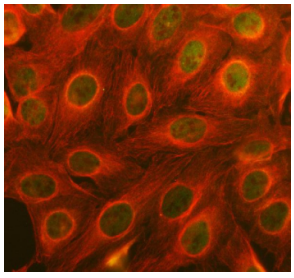
EGR2 Antibody / Early growth response 2 (R31299)

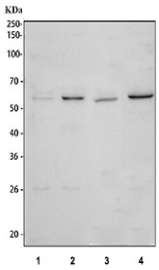
Catalog No.	Formulation	Size
R31299	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P11161
Localization	Nucleus
Applications	Western blot: 0.5-1ug/ml Immunofluorescence: 5ug/ml
Limitations	This EGR2 antibody is available for research use only.



Immunofluorescent staining of FFPE human U-2 OS cells with EGR2 antibody (green) and Alpha Tubulin mAb (red). HIER: steam section in pH6 citrate buffer for 20 min.



Western blot testing of 1) human HepG2, 2) human MCF7, 3) rat brain and 4) mouse brain lysate with EGR2 antibody. A single band is detected at approximately 60 kDa, migrating above the predicted 50 kDa size of unmodified EGR2. This upward shift is consistent with known post-translationally modified forms of the nuclear transcription factor EGR2 that exhibit reduced electrophoretic mobility in SDS-PAGE.

Description

EGR2 antibody detects Early Growth Response 2, a zinc finger transcription factor essential for regulating differentiation, development, and stimulus dependent gene expression. The UniProt recommended name is Early growth response protein 2 (EGR2). As a member of the EGR family of immediate early genes, EGR2 responds rapidly to extracellular cues and influences transcriptional programs involved in neural development, myelination, immune function, and cell fate determination. Because of its central regulatory role, EGR2 is widely studied in developmental biology, neurobiology, and immune signaling.

EGR2 is a nuclear protein of approximately 476 amino acids containing three C2H2 type zinc finger domains that bind GC rich DNA motifs within target promoters. Under resting conditions, EGR2 expression is low, but it is quickly induced by growth factors, cytokines, stress stimuli, cyclic AMP signals, and neuronal activity. Once expressed, EGR2 coordinates transcriptional responses that direct differentiation, morphogenesis, and homeostatic regulation in multiple tissues.

The EGR2 gene is located on chromosome 10q21.3 and is expressed in the peripheral nervous system, central nervous system, thymus, skin, vascular tissues, and developing organs. One of its most well known roles is in Schwann cell biology, where EGR2 (also known as Krox20) is required for peripheral nerve myelination. It activates key myelin genes and regulates transitions between Schwann cell states during nerve development and repair. Loss of EGR2 function disrupts myelin formation and contributes to neuropathic disease phenotypes.

Beyond the nervous system, EGR2 functions as an important regulator in immune cell development and activation. It influences T cell differentiation, peripheral tolerance, and macrophage activation states. EGR2 participates in feedback loops that balance immune activation and resolution, helping prevent excessive inflammation while supporting appropriate defensive responses. In endothelial and smooth muscle cells, EGR2 contributes to vascular remodeling, injury response pathways, and transcriptional programs that influence cell migration and extracellular matrix regulation.

EGR2 also plays a broader developmental role. During embryogenesis, EGR2 participates in segmentation of hindbrain structures, craniofacial patterning, and limb development. Its expression patterns help guide lineage specification and tissue organization. In adult tissues, EGR2 contributes to repair processes and cellular adaptation by modulating transcription factors, growth regulatory molecules, and stress responsive genes.

Pathologically, altered EGR2 expression or function is linked to several disorders. Mutations in EGR2 are associated with peripheral neuropathies, including Charcot Marie Tooth disease and Dejerine Sottas syndrome, largely due to impaired Schwann cell differentiation and myelin gene regulation. In immune related conditions, dysregulated EGR2 expression can disrupt tolerance mechanisms or exacerbate inflammatory cycles. In cancer research, EGR2 has been described as both a tumor suppressor and context dependent regulator, with altered expression patterns observed in certain lymphomas, gliomas, and epithelial tumors.

EGR2 is also used as a marker of activity dependent transcription in neural circuits and in studies examining growth factor induced signaling in epithelial or stromal cells. Its rapid induction downstream of ERK MAPK, calcium signaling, and cytokine receptor pathways makes it an informative readout of upstream signal integration. Because EGR2 influences long term transcriptional reprogramming, it serves as a bridge between short lived signal transduction events and lasting changes in gene expression.

EGR2 antibody is validated for use in relevant research applications to detect Early Growth Response 2 expression in cells and tissues and to support studies of transcriptional regulation, neuronal differentiation, immune signaling, and development. NSJ Bioreagents provides EGR2 antibody reagents suitable for neuroscience, immunology, developmental biology, and transcriptional control research.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the EGR2 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An amino acid sequence from the N-terminus of human Early growth response protein 2 (TMSQTQPDLDHLYSPP) was used as the immunogen for this EGR2 antibody.

Storage

After reconstitution, the EGR2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Copyright © NSJ Bioreagents. All rights reserved.