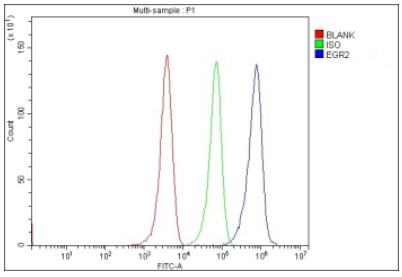
EGR2 Antibody / Early growth response protein 2 (FY12723)

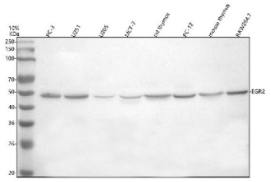
Catalog No.	Formulation	Size
FY12723	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P11161
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This EGR2 antibody is available for research use only.



Flow Cytometry analysis of MCF-7 cells using anti-EGR2 antibody. Overlay histogram showing MCF-7 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-EGR2 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of EGR2 using anti-EGR2 antibody. Lane 1: human PC-3 whole cell lysates, Lane 2: human U251 whole cell lysates, Lane 3: human U20S whole cell lysates, Lane 4: human MCF-7 whole cell lysates, Lane 5: rat thymus tissue lysates, Lane 6: rat PC-12 whole cell lysates, Lane 7: mouse thymus tissue lysates, Lane 8: mouse Raw264.7 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-EGR2 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A specific band was detected for EGR2 at approximately 50 kDa. The predicted molecular weight of EGR2 is at 50 kDa and 45 kDa (two isoforms).

Description

EGR2 antibody detects Early growth response protein 2 (also known as Krox-20), a zinc finger transcription factor that governs peripheral nerve myelination, hindbrain segmentation, and immune regulation. Encoded by the EGR2 gene on chromosome 10q21.3, this transcription factor belongs to the early growth response family of immediate-early genes activated by mitogenic and stress stimuli. EGR2 contains three C2H2-type zinc finger motifs that bind GC-rich DNA sequences to regulate genes controlling differentiation and growth arrest. It is essential for Schwann cell maturation and myelin gene expression in the peripheral nervous system.

During development, EGR2 plays a critical role in establishing segmental identity within the hindbrain by defining rhombomere boundaries and activating patterning genes. In Schwann cells, EGR2 drives transcription of myelin structural proteins including MPZ, PMP22, and MBP, ensuring proper myelin sheath formation and maintenance. Mutations in EGR2 cause hereditary neuropathies such as Charcot-Marie-Tooth disease type 1D and Dejerine-Sottas syndrome, underscoring its indispensable function in myelination. The protein also participates in T-cell anergy and macrophage activation by regulating cytokine gene expression.

The EGR2 antibody is widely used in neurobiology, developmental biology, and immunology to detect EGR2 protein expression and localization. Western blot analysis typically shows a 50 kilodalton band, while immunohistochemistry reveals strong nuclear staining in Schwann cells and developing neurons. Expression of EGR2 is inducible by growth factors, nerve injury, and mechanical stress, making it a sensitive marker for differentiation and regeneration. In the immune system, EGR2 acts as a transcriptional repressor in T cells to maintain peripheral tolerance by suppressing activation genes.

Beyond its physiological roles, EGR2 has been implicated in tumor biology and inflammatory disease. Altered EGR2 signaling can disrupt differentiation programs and contribute to leukemogenesis or autoimmune disorders. In cancer models, EGR2 functions context-dependently as either a tumor suppressor or pro-survival factor, depending on cellular environment. The EGR2 antibody allows researchers to explore these regulatory networks, providing a means to monitor transcriptional changes during neural development and immune modulation. NSJ Bioreagents provides this antibody validated for its applications, ensuring consistent and specific detection across experimental systems.

Application Notes

Optimal dilution of the EGR2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human EGR2 recombinant protein (Position: M1-R257) was used as the immunogen for the 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.