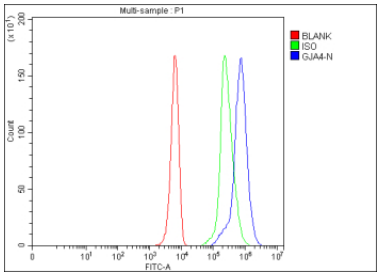
GJA4 Antibody / Gap junction alpha 4 (FY12606)

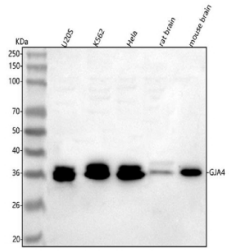
Catalog No.	Formulation	Size
FY12606	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
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	P35212
Applications	ELISA : 0.1-0.5ug/ml Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This GJA4 antibody is available for research use only.



Flow Cytometry analysis of K562 cells using anti-GJA4 antibody. Overlay histogram showing K562 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-GJA4 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 (Red line) was also used as a control.



Western blot analysis of GJA4 using anti-GJA4 antibody. Lane 1: human U20S whole cell lysates, Lane 2: human K562 whole cell lysates, Lane 3: human Hela whole cell lysates, Lane 4: rat brain tissue lysates, Lane 5: mouse brain tissue 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-GJA4 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. Western blot probed with anti-GJA4 shows a characteristic doublet near ~37 kDa, consistent with phosphorylated and non-phosphorylated forms of Connexin 37.

Description

GJA4 antibody detects Gap junction alpha-4 protein, also known as Connexin 37, a transmembrane protein forming intercellular channels that mediate direct communication between adjacent cells. GJA4 enables diffusion of ions, metabolites, and signaling molecules, maintaining vascular tone and tissue homeostasis. The GJA4 antibody is widely used in cardiovascular, reproductive, and cellular communication studies to explore gap junction biology and endothelial signaling.

GJA4 is encoded by the GJA4 gene on human chromosome 1p35.1. The protein is approximately 333 amino acids long and contains four transmembrane helices, two extracellular loops, and cytoplasmic N- and C-terminal domains. GJA4 assembles into hexameric connexons that dock with connexons of neighboring cells, forming gap junction channels that permit electrical and chemical coupling.

The GJA4 antibody detects a 37 kilodalton band by western blot and shows punctate membrane staining consistent with gap junction plaques under immunofluorescence. GJA4 is abundantly expressed in vascular endothelial and smooth muscle cells, where it mediates synchronized contraction and vascular tone regulation. In ovarian follicles and the placenta, GJA4 facilitates cell communication critical for follicular development and embryonic exchange.

Mutations in GJA4 disrupt gap junction communication, contributing to vascular dysfunction and reproductive disorders. Altered GJA4 expression has been observed in atherosclerosis, hypertension, and tumor angiogenesis. Its expression pattern varies with hormonal and mechanical stimuli, reflecting its responsiveness to physiological cues controlling vascular integrity.

GJA4 channels are regulated by phosphorylation, pH, and redox state, allowing dynamic modulation of intercellular connectivity. Because gap junctions coordinate tissue-level responses, GJA4 represents a vital component of multicellular signaling networks. NSJ Bioreagents provides a validated GJA4 antibody optimized for its applications, supporting detailed studies of cell coupling, signal propagation, and endothelial homeostasis.

Application Notes

Optimal dilution of the GJA4 antibody should be determined by the researcher.

Immunogen

E.coli-derived human GJA4 recombinant protein (Position: H95-R148) was used as the immunogen for the GJA4 antibody.

Storage

After reconstitution, the GJA4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.