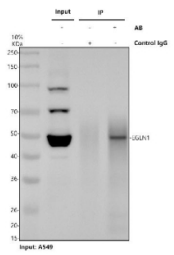
EGLN1 Antibody / Egl nine homolog 1 (FY13439)

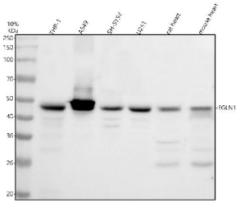
Catalog No.	Formulation	Size
FY13439	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

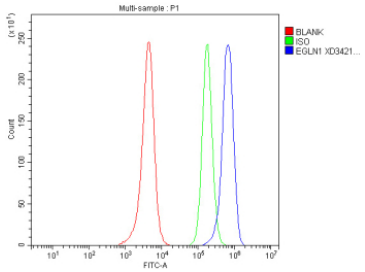
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
UniProt	Q9GZT9
Localization	Cytoplasm, Nucleus
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells Immunoprecipitation : 2ug per 500ug of lysate
Limitations	This EGLN1 antibody is available for research use only.



Immunoprecipitation and western blot analysis of Egl nine homolog 1 using EGLN1 antibody. Lane 1: input human A549 whole cell lysates (30 ug); Lane 2: immunoprecipitation performed using rabbit control IgG with A549 whole cell lysates; Lane 3: immunoprecipitation performed using EGLN1 antibody with A549 whole cell lysates (500 ug input, 2 ug antibody). Following immunoprecipitation, proteins were resolved by SDS-PAGE and transferred to a membrane. A distinct band is detected at approximately 46 kDa in the EGLN1 antibody immunoprecipitation lane, consistent with the predicted molecular weight of Egl nine homolog 1. The control IgG lane shows no corresponding signal, supporting specific enrichment of EGLN1 from A549 cell lysates.



Western blot analysis of Egl nine homolog 1 using EGLN1 antibody. Lane 1: human THP-1 whole cell lysates; Lane 2: human A549 whole cell lysates; Lane 3: human SH-SY5Y whole cell lysates; Lane 4: human U251 whole cell lysates; Lane 5: rat heart tissue lysates; Lane 6: mouse heart tissue lysates. A distinct band is detected at approximately 46 kDa across human and rodent samples, consistent with the predicted molecular weight of Egl nine homolog 1. The observed banding pattern supports detection of EGLN1 in both cell line and tissue-derived lysates.



Flow cytometry analysis of fixed and permeabilized human SH-SY5Y cells with EGLN1 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= EGLN1 antibody.

Description

EGLN1 antibody targets Egl nine homolog 1, encoded by the EGLN1 gene. Egl nine homolog 1, also known as prolyl hydroxylase domain protein 2, is a cytoplasmic and nuclear enzyme that functions as a central oxygen sensor in mammalian cells. EGLN1 belongs to the family of 2-oxoglutarate-dependent dioxygenases and catalyzes proline hydroxylation reactions that are tightly regulated by cellular oxygen availability.

Functionally, Egl nine homolog 1 plays a critical role in regulation of hypoxia-inducible factor signaling. Under normoxic conditions, EGLN1 hydroxylates specific proline residues on hypoxia-inducible factor alpha subunits, marking them for recognition by the von Hippel-Lindau protein and subsequent proteasomal degradation. Through this mechanism, EGLN1 maintains low hypoxia-inducible factor activity when oxygen levels are sufficient. An EGLN1 antibody supports studies focused on oxygen sensing and hypoxia-regulated transcription.

EGLN1 is broadly expressed across tissues, reflecting the universal need for oxygen-sensing mechanisms in mammalian physiology. Its activity is particularly relevant in tissues with fluctuating oxygen supply, such as kidney, lung, and vascular-associated cells. EGLN1 localization and activity can be influenced by cellular redox state, metabolic intermediates, and cofactor availability, allowing fine control of hypoxia-responsive pathways.

From a disease-relevance perspective, Egl nine homolog 1 has been extensively studied in cancer, cardiovascular disease, and ischemic disorders. Dysregulation of EGLN1 activity can lead to aberrant hypoxia-inducible factor stabilization, promoting angiogenesis, metabolic reprogramming, and altered cell survival. Genetic variation in EGLN1 has also been linked to high-altitude adaptation and erythropoiesis, highlighting its importance in systemic oxygen homeostasis.

At the molecular level, Egl nine homolog 1 contains conserved catalytic domains required for iron and 2-oxoglutarate binding, which are essential for hydroxylase activity. Post-translational modifications and cellular context can influence its enzymatic activity and apparent behavior in biochemical assays without altering the primary amino acid sequence. EGLN1 antibody reagents support research applications focused on hypoxia signaling, oxygen-dependent gene regulation, and disease-associated cellular adaptation, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the EGLN1 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human Egl nine homolog 1 protein was used as the immunogen for the EGLN1 antibody.

Storage

After reconstitution, the EGLN1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.