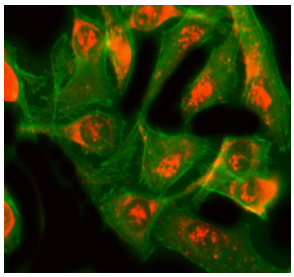
GINS3 Antibody / GINS protein subunit 3 (FY13036)

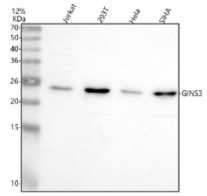
Catalog No.	Formulation	Size
FY13036	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

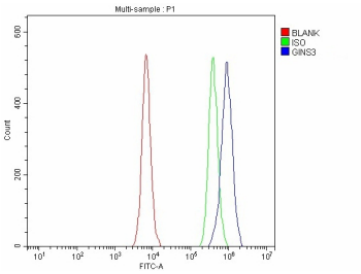
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9BRX5
Localization	Nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This GINS3 antibody is available for research use only.



Immunofluorescent staining of GINS3 using anti-GINS3 antibody (red) and anti-Tubulin mAb (green). GINS3 was detected in an immunocytochemical section of Hela cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-GINS3 antibody overnight at 4oC. DyLight 594 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37oC. The tissue section was developed using Phalloidin-iFluor 488 Conjugated. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of GINS3 using anti-GINS3 antibody. Lane 1: human Jurkat whole cell lysates, Lane 2: human 293T whole cell lysates, Lane 3: human Hela whole cell lysates, Lane 4: human SiHa 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-GINS3 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 GINS3 at approximately 25 kDa. The expected molecular weight of GINS3 is ~25 kDa.



Flow Cytometry analysis of Caco-2 cells using anti-GINS3 antibody. Overlay histogram showing Caco-2 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-GINS3 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.

Description

GINS3 antibody detects DNA replication complex GINS protein subunit 3, a component of the GINS complex essential for the initiation and elongation phases of eukaryotic DNA replication. The UniProt recommended name is DNA replication complex GINS protein subunit 3 (GINS3). This protein is a critical element of the CMG helicase complex, which unwinds DNA strands during replication fork progression.

Functionally, GINS3 antibody identifies a 223-amino-acid protein that forms part of the heterotetrameric GINS complex along with GINS1 (Sld5), GINS2 (Psf2), and GINS4 (Psf3). The GINS complex interacts with Cdc45 and the MCM2-7 helicase to form the CMG (Cdc45-MCM-GINS) complex, which drives replication fork unwinding and DNA synthesis. GINS3 stabilizes this complex, ensuring efficient replication initiation and fork progression during S phase.

The GINS3 gene is located on chromosome 16q24.1 and encodes a conserved protein expressed in proliferating cells and tissues undergoing rapid growth. GINS3 functions as a scaffold subunit, mediating interactions between GINS partners and replication factors such as DNA polymerase epsilon. Its depletion leads to stalled replication forks, DNA damage accumulation, and activation of checkpoint signaling, highlighting its essential role in genome duplication.

In cell cycle regulation, GINS3 contributes to origin firing and replication timing control. It is recruited to replication origins during early S phase and remains associated with active replication forks. Dysregulation of GINS3 or other CMG components disrupts DNA replication dynamics and can result in replication stress, chromosomal instability, and tumorigenesis. Overexpression of GINS subunits has been observed in cancers characterized by high proliferation rates, including breast, ovarian, and colorectal cancers.

GINS3 antibody is widely used in cell cycle, DNA replication, and cancer research. It is suitable for immunoblotting, immunofluorescence, and chromatin fractionation assays to examine GINS3 expression and complex formation. This antibody supports studies of replication fork mechanics, checkpoint signaling, and DNA damage responses. In oncology, it helps assess replication stress pathways and therapeutic sensitivity to DNA synthesis inhibitors.

Structurally, GINS3 adopts a beta-sheet-rich fold that interfaces with GINS1 and GINS2 to stabilize the quaternary complex. It acts as a bridge linking DNA helicase and polymerase activities at replication forks. NSJ Bioreagents provides GINS3 antibody reagents validated for use in DNA replication, cell cycle progression, and genomic integrity research.

Application Notes

Optimal dilution of the GINS3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human GINS3 recombinant protein (Position: M1-D216) was used as the immunogen for the GINS3 antibody.

Storage

After reconstitution, the GINS3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.