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ATAD5 / FRAG1 Antibody (internal region)

Peptide-affinity purified goat antibody
Catalog # AF2557a

Specification

ATAD5 / FRAG1 Antibody (internal region) - Product Information

Application	**IF, FC**
Primary Accession	Q96QE3
Other Accession	NP_079133.3, 79915
Predicted	**Human**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**0.5 mg/ml**
Isotype	**IgG**
Calculated MW	**207570**

ATAD5 / FRAG1 Antibody (internal region) - Additional Information

Gene ID 79915

Other Names
ATPase family AAA domain-containing protein 5, Chromosome fragility-associated gene 1 protein, ATAD5, C17orf41, FRAG1

Format
0.5 mg/ml in Tris saline, 0.02% sodium azide, pH7.3 with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
ATAD5 / FRAG1 Antibody (internal region) is for research use only and not for use in diagnostic or therapeutic procedures.

ATAD5 / FRAG1 Antibody (internal region) - Protein Information

Name ATAD5 (HGNC:25752)

Function
Has an important role in DNA replication and in maintaining genome integrity during replication stress (PubMed:15983387, PubMed:19755857). Involved in a RAD9A-related damage checkpoint, a pathway that is important in determining whether DNA damage is compatible with cell survival or whether it requires cell elimination by apoptosis (PubMed:15983387). Modulates

the RAD9A interaction with BCL2 and thereby induces DNA damage-induced apoptosis (PubMed:15983387). Promotes PCNA deubiquitination by recruiting the ubiquitin-specific protease 1 (USP1) and WDR48 thereby down-regulating the error-prone damage bypass pathway (PubMed:20147293). As component of the ATAD5 RFC-like complex, regulates the function of the DNA polymerase processivity factor PCNA by unloading the ring-shaped PCNA homotrimer from DNA after replication during the S phase of the cell cycle (PubMed:23277426, PubMed:23937667). This seems to be dependent on its ATPase activity (PubMed:23277426). Plays important roles in restarting stalled replication forks under replication stress, by unloading the PCNA homotrimer from DNA and recruiting RAD51 possibly through an ATR-dependent manner (PubMed:31844045). Ultimately this enables replication fork regression, breakage, and eventual fork restart (PubMed:31844045). Both the PCNA unloading activity and the interaction with WDR48 are required to efficiently recruit RAD51 to stalled replication forks (PubMed:31844045). Promotes the generation of MUS81-mediated single-stranded DNA-associated breaks in response to replication stress, which is an alternative pathway to restart stalled/regressed replication forks (PubMed:31844045).

Cellular Location
Nucleus. Note=Accumulates in nuclear foci at sites of stalled DNA replication forks in response to DNA damage

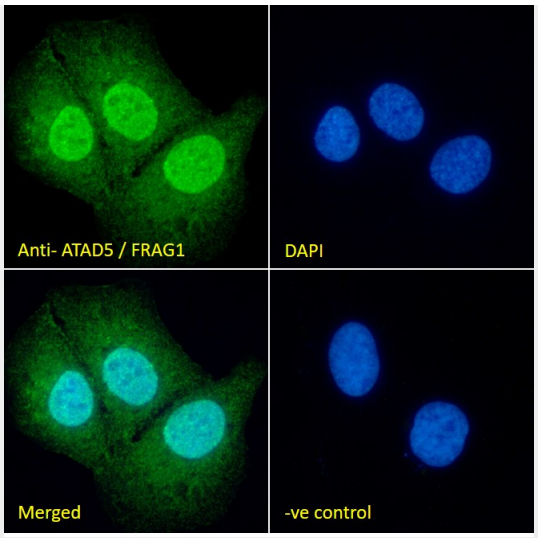
ATAD5 / FRAG1 Antibody (internal region) - Protocols

Provided below are standard protocols that you may find useful for product applications.

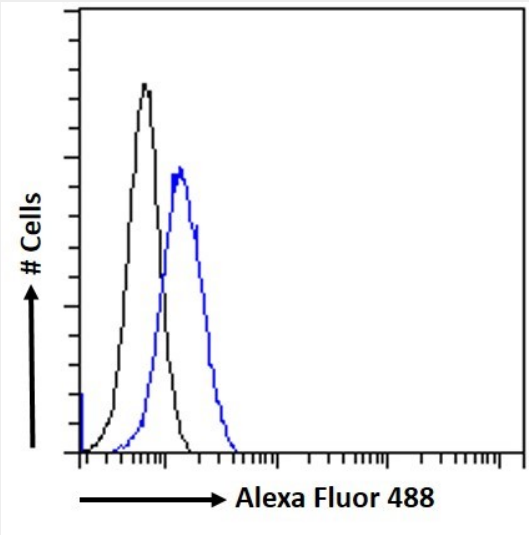
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

ATAD5 / FRAG1 Antibody (internal region) - Images

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EB07634 Immunofluorescence analysis of paraformaldehyde fixed U2OS cells, permeabilized with 0.15% Triton. Primary incubation 1hr (10ug/ml) followed by Alexa Fluor 488 secondary antibody (2ug/ml), showing nuclear staining. The nuclear stain is DAPI (blue). Negative control: Unimmunized goat IgG (10ug/ml) followed by Alexa Fluor 488 secondary antibody (2ug/ml).



EB07634 Flow cytometric analysis of paraformaldehyde fixed HeLa cells (blue line), permeabilized with 0.5% Triton. Primary incubation 1hr (10ug/ml) followed by Alexa Fluor 488 secondary antibody (1ug/ml). IgG control: Unimmunized goat IgG (black line) followed by Alexa Fluor 488 secondary antibody.

ATAD5 / FRAG1 Antibody (internal region) - References

Frag1, a homolog of alternative replication factor C subunits, links replication stress surveillance with apoptosis. Ishii H, Inageta T, Mimori K, Saito T, Sasaki H, Isobe M, Mori M, Croce CM, Huebner K, Ozawa K, Furukawa Y. Proc Natl Acad Sci U S A. 2005 Jul 5;102(27):9655-60. Epub 2005 Jun 27. PMID: 15983387