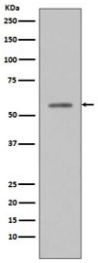
Phospho-p53 (pSer33) Antibody / DNA Damage Response and Stress Signaling Marker [clone ACD-20] (RQ5063)

Catalog No.	Formulation	Size
RQ5063	Antibody in PBS with 0.02% sodium azide, 50% glycerol and 0.4-0.5mg/ml BSA	100 ul

Bulk quote request

Availability	1-2 weeks
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	ACD-20
Purity	Affinity purified
UniProt	P04637
Applications	Western Blot : 1:500-1:2000
Limitations	This Phospho-p53 (pSer33) Antibody / DNA Damage Response and Stress Signaling Marker is available for research use only.



Phospho-p53 Antibody T-47D WB. Western blot analysis of human T-47D cell lysate treated with etoposide using phospho-p53 antibody detecting p53 phosphorylated at Ser33, clone ACD-20. A band is detected at approximately 53 kDa, consistent with the predicted molecular weight of p53. Detection in etoposide-treated cells is consistent with activation of p53 in response to DNA damage.

Description

Tumor protein p53 (TP53) is a key transcription factor that mediates cellular responses to DNA damage and other stress signals, coordinating cell cycle arrest, apoptosis, and DNA repair pathways. Phospho-p53 (pSer33) Antibody, clone ACD-20, is designed to detect p53 phosphorylated at serine 33, a site associated with activation of the DNA damage response and enhancement of p53 transcriptional activity. Phosphorylation at Ser33 is part of a broader network of stress-

induced modifications that stabilize and activate p53 following genotoxic insult. This antibody is part of our full phospho antibody collection which can be explored for additional phosphorylation-specific targets and pathway markers.

Upon exposure to DNA-damaging agents such as etoposide, ionizing radiation, or ultraviolet light, p53 is phosphorylated at multiple serine residues by stress-activated kinases including ATM, ATR, and other DNA damage response regulators. Phosphorylation at Ser33 contributes to disruption of p53 interaction with its negative regulator MDM2, leading to stabilization and accumulation of the protein. This allows p53 to activate transcription of genes involved in cell cycle arrest, DNA repair, and apoptosis.

Detection of Ser33 phosphorylation provides a direct readout of p53 activation in response to DNA damage. Unlike total p53 detection, which reflects overall protein levels, phospho-specific detection at Ser33 indicates functional engagement of stress response pathways. Increased phosphorylation is typically observed following DNA damage and correlates with activation of checkpoint signaling and transcriptional programs that maintain genomic integrity.

Subcellularly, activated p53 is predominantly localized in the nucleus, where it functions as a transcription factor. Immunohistochemistry and immunofluorescence studies often reveal nuclear accumulation of phosphorylated p53 following DNA damage, consistent with its role in regulating gene expression. This nuclear localization distinguishes activated p53 from inactive or cytoplasmic forms.

Dysregulation of p53 signaling is a hallmark of cancer, and impairment of phosphorylation-dependent activation can lead to failure of appropriate DNA damage responses. Monitoring phosphorylation at Ser33 provides insight into cellular responses to genotoxic stress and the functional status of p53 signaling pathways in experimental systems.

Phospho-p53 (pSer33) Antibody, clone ACD-20, enables selective detection of activated p53, supporting studies of DNA damage response, stress signaling, and transcriptional regulation. Its specificity for this phosphorylation site makes it a valuable tool for assessing p53 pathway activation in response to genotoxic stimuli.

For analysis of p53 stability and turnover regulation, see our Phospho-p53 (Thr55) Antibody page.

Application Notes

Optimal dilution of the Phospho-p53 (pSer33) Antibody / DNA Damage Response and Stress Signaling Marker should be determined by the researcher.

Immunogen

A synthetic peptide specific to human p53 (surrounding pS33) was used as the immunogen for the Phospho-p53 (pSer33) Antibody.

Storage

Store the Phospho-p53 (pSer33) Antibody at -20oC.

Alternate Names

Phospho-p53 antibody, p53 pSer33 antibody, p53 Ser33 antibody, TP53 phospho antibody, phosphorylated p53 antibody, DNA damage marker antibody, clone ACD-20 antibody