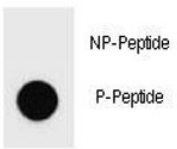
Phospho-PARP1 (Ser177) Antibody / DNA Damage Response Marker Antibody (F48726)

Catalog No.	Formulation	Size
F48726-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F48726-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Predicted Reactivity	Mouse, Rat, Hamster
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	P09874
Applications	Dot blot: 1:500
Limitations	This Phospho-PARP1 (Ser177) Antibody / DNA Damage Response Marker Antibody is available for research use only.



Phospho-PARP1 (Ser177) Antibody Peptide Dot Blot. Dot blot analysis of phospho-specific peptide recognition using Phospho-PARP1 (Ser177) antibody. Fifty nanograms of phosphorylated peptide (P-peptide) or non-phosphorylated peptide (NP-peptide) were spotted per dot. Strong signal is detected with the phosphorylated PARP1 Ser177 peptide, while minimal reactivity is observed with the corresponding non-phosphorylated control peptide, supporting phospho-dependent target recognition specificity.

Description

Poly [ADP-ribose] polymerase 1 (PARP1) is a nuclear DNA damage response enzyme encoded by the PARP1 gene that plays essential roles in chromatin remodeling, DNA repair, genomic stability, transcriptional regulation, and cellular stress signaling. Phospho-PARP1 (Ser177) Antibody / DNA Damage Response Marker Antibody is designed to support

investigation of phosphorylation-dependent PARP1 signaling associated with oxidative stress, DNA strand break responses, and chromatin-associated repair mechanisms. Phospho-PARP1 (Ser177) antibody, also referred to as PARP1 pS177 antibody, Phospho PARP antibody, or DNA repair phosphoprotein antibody in the literature, recognizes PARP1 phosphorylated at serine 177, a regulatory phosphorylation site implicated in stress-responsive signaling pathways linked to PARP1 activation and cellular injury responses.

PARP1 functions as a DNA damage sensor that rapidly binds DNA strand breaks and catalyzes poly-ADP ribosylation of target proteins involved in chromatin relaxation and DNA repair complex recruitment. Upon activation, PARP1 regulates multiple cellular pathways associated with base excision repair, transcriptional control, replication stress adaptation, apoptosis, and inflammatory signaling. PARP1 activity is tightly regulated through post-translational modifications including phosphorylation, acetylation, SUMOylation, ubiquitination, and PARylation. Ser177 phosphorylation has been associated with stress-responsive kinase signaling mechanisms that influence PARP1 functional activity and downstream DNA repair responses.

Phosphorylation-dependent PARP1 signaling has been implicated in oxidative stress injury, ischemia-reperfusion damage, endothelial dysfunction, metabolic stress responses, inflammation, and cancer-associated genomic instability. Studies have linked PARP1 Ser177 phosphorylation to AMP-activated protein kinase (AMPK)-associated signaling pathways that regulate endothelial nitric oxide synthase activity, reactive oxygen species generation, and vascular stress adaptation. Because PARP1 integrates metabolic sensing with DNA damage signaling, phospho-specific PARP1 antibodies are valuable tools for investigating cellular stress signaling networks and chromatin-associated repair mechanisms.

Aberrant PARP1 activation contributes to numerous disease processes including neurodegeneration, cardiovascular disease, inflammatory disorders, ischemic injury, and tumor progression. PARP1 signaling is also highly relevant in oncology because tumor cells frequently depend on DNA repair adaptation pathways to survive replication stress and genomic instability. PARP inhibitors are now widely used in targeted cancer therapy, particularly in tumors with homologous recombination repair defects. Phosphorylation-specific PARP1 reagents therefore provide additional insight into upstream regulatory signaling events that modulate PARP1 activity during stress and DNA repair responses.

At the cellular level, phosphorylated PARP1 is predominantly localized within the nucleus where it associates with chromatin and DNA repair complexes. Stress-induced phospho-PARP1 signaling may increase following oxidative injury, genotoxic stress, inflammatory stimulation, or metabolic dysfunction. This rabbit polyclonal phospho-PARP1 (Ser177) antibody is designed to support research applications investigating phosphorylation-dependent regulation of PARP1 signaling, chromatin-associated DNA repair biology, and cellular stress response pathways.

Additional PARP1 pathway and chromatin-associated DNA repair studies may benefit from our PARP1 antibody page featuring recombinant rabbit monoclonal clone CFD-16 with knockdown-validated target recognition.

Application Notes

Titration of the Phospho-PARP1 (Ser177) Antibody / DNA Damage Response Marker Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

This phospho-PARP antibody was produced from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding pS177 of human PARP1.

Storage

Aliquot the phospho-PARP antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Phospho PARP1 Ser177 antibody, PARP1 pS177 antibody, Phospho PARP antibody, DNA repair phosphoprotein

antibody, PARP1 phosphorylation antibody

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