

Phosphorylation of p53

Kinase(s)	Activated by	Phosphorylation site on p53	Molecular or cellular outcome	Ref
ATM	DNA damage	Ser15	Apoptosis	
ATR	γ-radiation, UV light	Ser15, Ser37	Apoptosis	
AURKA	Overexpression of AURKA	Ser315	Ubiquitylation and degradation of p53	
CDK (CDC2/CDK2)	UV light	Ser315	Increased p53 transcription	
CHK1/CHK2	Ionizing radiation	Ser20	Disruption of the MDM2-p53 complex	
CK1	Topoisomerase-directed drugs and DNA damage	Ser6, Ser9, Thr18 (requires prior phosphorylation of Ser15)	Stabilization of p53 through inhibition of MDM2	
CSN-associated kinase complex	Unstressed	Thr150, Thr155, Ser149	Degradation	
DNAPK	DNA damage	Ser15, Ser37	Disruption of the MDM2-p53 complex	
ERKs	UV light	Ser15	Apoptosis	
ERK2	Doxorubicin	Thr55	Activation of p53	
FACT ⁺ -CK2	UV light	Ser392	Increased p53 activity	
GSK3β	Endoplasmic reticulum stress	Ser315, Ser376	Inhibition of p53-mediated apoptosis	
HIPK2	UV light	Ser46	Facilitates CBP-mediated acetylation of p53 (at Lys382); arrest; apoptosis	
JNK	UV light	Ser20	Apoptosis	
JNK	DNA damage	Thr81	Stabilization	
MAPKAPK2	UV light	Ser20	Apoptosis	
p38 kinase	UV light	Ser15	Apoptosis	
p38 kinase	UV light	Ser33, Ser46	Stabilized p53; apoptosis	
p38 kinase	UV light DNA damage	Ser392	Increased DNA-binding activity of p53	
PKC	Unstressed; constitutively phosphorylated and dephosphorylated with IR light	Ser376 and Ser378	Ubiquitylation and degradation; increased DNA-binding affinity	
PKR [‡]	Interferon	Ser392	ND	
TAF1 [§]	Constitutively phosphorylated	Thr55	Degradation of p53/ stabilization of p53	

