Anti-Phospho-Ser^{326} CtIP Antibody

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Catalog #: p1012-326 **Size:** 100 µl

Cite this Antibody: PhosphoSolutions Cat# p1012-326, RRID:AB_ 2651147

Host	Applications	Species Tested	Species Reactivity*	Molecular Weight
Rabbit	WB 1:1000	H	NHP	~100 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

Biological Significance: CtIP, C-terminal binding protein-interacting protein, is a DNA endonuclease activated by double stranded breaks (DSBs). DSB repairs can be performed by either one of two mechanisms; non-homologous end joining (NHEJ) or homologous recombination (HR). NHEJ is the predominant DSB repair pathway throughout the entire cell cycle, most importantly in the G1 phase (Rothkamm et al, 2003); while HR is important for repairing DSBs in S and G2 phases (Beucher et al, 2009). CtIP controls DSB resection; an event that only occurs in HR during G2-phase. Phosphorylation of Thr847 dictates the resection efficiency (Huertas et al, 2008). Furthermore, it has been found that DSBs undergo resection and repair in G1-phase cells via a process requiring Plk3 phosphorylation of CtIP at Ser327 and Thr847 (Barton et al, 2014). Several additional phosphorylation sites within CtIP have been identified, but their significance in the repair of DNA have yet to be determined.

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser^{326} of human CtIP.

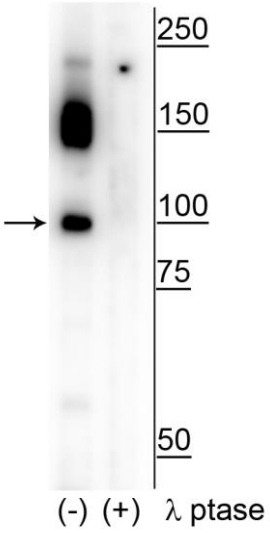
Antibody Specificity: Specific for endogenous levels of the ~100 kDa CtIP protein phosphorylated at Ser^{326}. Immunolabeling is completely eliminated by treatment with λ-Ptase.

Purification Method: Prepared from pooled rabbit serum by affinity purification via sequential chromatography on phospho and non-phosphopeptide affinity columns.

Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol.

Storage and Stability: Shipped on blue ice. Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.



Western blot of human T47D cell lysate showing specific immunolabeling of the ~100 kDa CtIP phosphorylated at Ser^{326} in the first lane (-). Phosphospecificity is shown in the second lane (+) where immunolabeling is completely eliminated by blot treatment with *lambda* phosphatase (λ-Ptase, 1200 units for 30 min).

Application Key: **WB** = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation
Species Reactivity Key: **All**-All Species **A**-Avian **Amp**-Amphibian **Ar**-*Arabidopsis* **B**-Bovine **C**-Canine **Ch**-Chicken **D**-*Drosophila* **G**-Goat **GP**-Guinea Pig **H**-Human **Ha**-Hamster **M**-Mouse **NHP**- Non-human primate **P**-Pig **R**-Rat **S**-Sheep **X**-*Xenopus* **Z**-Zebrafish
*Species assumed based on 100% homology with sequence used as antigen **For Research Use Only**

General References:

Rothkamm, K., Krüger, I., Thompson, L.H. and Löbrich, M., 2003. Pathways of DNA double-strand break repair during the mammalian cell cycle. *Molecular and cellular biology*, 23(16), pp.5706-5715.

Beucher, A., Birraux, J., Tchouandong, L., Barton, O., Shibata, A., Conrad, S., Goodarzi, A.A., Krempler, A., Jeggo, P.A. and Löbrich, M., 2009. ATM and Artemis promote homologous recombination of radiation-induced DNA double-strand breaks in G2. *The EMBO journal*, 28(21), pp.3413-3427.

Huertas, P. and Jackson, S.P., 2009. Human CtIP mediates cell cycle control of DNA end resection and double strand break repair. *Journal of Biological Chemistry*, 284(14), pp.9558-9565.

Barton, O., Naumann, S.C., Diemer-Biehs, R., Künzel, J., Steinlage, M., Conrad, S., Makharashvili, N., Wang, J., Feng, L., Lopez, B.S. and Paull, T.T., 2014. Polo-like kinase 3 regulates CtIP during DNA double-strand break repair in G1. *J Cell Biol*, 206(7), pp.877-894.

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