

**AM06003PU-N****Monoclonal Antibody to CHK2 - Purified****Alternate names:**

CHEK-2, CHEK2, CHK-2, CHK2 checkpoint homolog, Cds1, RAD53, Serine/threonine-protein kinase Chk2

**Quantity:**

50 µg

**Background:**

Chk2 (checkpoint kinase 2) is the mammalian homolog of the *Saccharomyces cerevisiae* Rad53 and is required for the DNA damage and replication checkpoints (1). In response to low-dose ionizing radiation (IR), which occurs in an ataxia telangiectasia mutated (ATM)-dependent manner, Chk2 can phosphorylate the mitosis-inducing phosphatase Cdc25C on an inhibitory site, blocking entry into mitosis, and p53 on a regulatory site, causing G1 arrest (2,3). In human tissues, Chk2 is homogeneously expressed in renewing cell populations such as epidermis or intestine, heterogeneous in conditionally renewing tissues, and absent or at low level in static tissues such as muscle or brain (4). Mutations in Chk2 inactivates DNA damage checkpoint pathway involving Chk2 in lung cancer suggesting that reduced expression of Chk2 may be responsible for the development of lung cancer (5). The Chk2<sup>-/-</sup> knockout cells are resistant to DNA damage-induced apoptosis, defective for p53 stabilization and for induction of p53-dependent transcripts such as p21 in response to gamma irradiation (6).

**Uniprot ID:**

[O96017](#)

**NCBI:**

[NP\\_001005735.1](#)

**GeneID:**

[11200](#)

**Host / Isotype:**

Mouse / IgG1

**Recommended Isotype Controls:**

SM10P (for use in human samples), AM03095PU-N

**Clone:**

73C175.1.1

**Immunogen:**

A synthetic peptide obtained from Human Chk2 protein sequence

**Format:**

**State:** Liquid purified IgG fraction

**Purification:** Protein G Chromatography

**Buffer System:** PBS containing 0.02% Sodium Azide

**Applications:**

**Immunohistochemistry on Paraffin Sections:** 10 µg/ml.

**Western Blot:** 2 µg/ml.

Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

**Specificity:**

This antibody detects Serine/Threonine Protein Kinase CHK2 (CHEK2) (Family: Protein Kinase, Subfamily: CDS1).

**Species:** Human.

Other species not tested.

**Storage:** Store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C to -70°C for longer.  
Avoid repeated freezing and thawing.  
Shelf life: one year from despatch.

**General Readings:**

1. Lukas C, Bartkova J, Latella L, Falck J, Mailand N, Schroeder T, et al. DNA damage-activated kinase Chk2 is independent of proliferation or differentiation yet correlates with tissue biology. *Cancer Res.* 2001 Jul 1;61(13):4990-3. PubMed PMID: 11431331.
2. Shieh SY, Ahn J, Tamai K, Taya Y, Prives C. *Genes Dev* 14(3): 289-300 (2000).
3. Falck J, Mailand N, Syljuasen RG, Bartek J, Lukas J. *Nature* 410 (6830): 842-847 (2001).
4. Matsuoka S, Huang M, Elledge SJ. *Science* 4; 282(5395): 1893-1897 (1998).
5. Hirao A, Kong YY, Matsuoka S, Wakeham A, Ruland J, Yoshida H, et al. DNA damage-induced activation of p53 by the checkpoint kinase Chk2. *Science.* 2000 Mar 10;287(5459):1824-7. PubMed PMID: 10710310.
6. Matsuoka S, Nakagawa T, Masuda A, Haruki N, Elledge SJ, Takahashi T. Reduced expression and impaired kinase activity of a Chk2 mutant identified in human lung cancer. *Cancer Res.* 2001 Jul 15;61(14):5362-5. PubMed PMID: 11454675.

**Pictures:** AM06003PU-N CHEK2 antibody staining of Formalin-Fixed, Paraffin-Embedded Human Spleen at 10 µg/ml followed by Biotin anti-Mouse IgG secondary antibody, Alkaline Phosphatase-streptavidin and Chromogen.

