

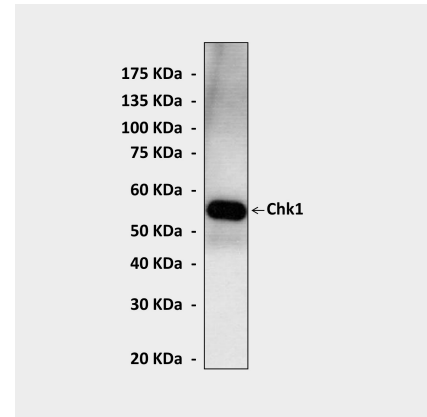
## BACKGROUND

Checkpoint kinase 1 (Chk1) is a serine/threonine protein kinase and a key mediator in the DNA damage-induced checkpoint network.<sup>1</sup> The key mission of Chk1 is to relay the checkpoint signals from the proximal checkpoint kinases of the phosphatidylinositol 3-kinase family, particularly ATM and ATR, and likely also the newly identified ATX, which phosphorylate and activate Chk1. The labile Chk1 protein is largely restricted to S and G2 phases. It is active even in unperturbed cell cycles, and although it is further activated in response to DNA damage or stalled replication, this may not require Chk1 dimerization or autophosphorylation.<sup>2,3</sup> Following their activation, Chk1 phosphorylates downstream effectors that further propagate the checkpoint signaling. Depending on the type of stress, velocity of DNA damage, and cellular context, this leads to (a) switch to the stress-induced transcription program (E2F1, Brca1, p53), (b) direct or indirect initiation of DNA repair (p53), (c) acute delay (degradation of Cdc25A) and/or sustained block (Cdc25C, p53) of cell cycle progression, (d) apoptosis (p53, E2F1), and (e) modulation of the chromatin remodeling pathways (Tik1/2).<sup>4</sup>

### References:

1. Tao, Z. F. & Lin, N. H.: *Anticancer Agents Med. Chem.* 6:377, 2006.
2. Lam, M. N. & Rosen, J. M.: *Cell Cycle* 3:1355, 2004.
3. Zhou, B. B. & Sausville, E.A.: *Prog Cell Cycle Res.* 5:413, 2003.
4. Bartes, J. & Lukas, J.: *Cancer Cell* 3:421, 2003.

## QUALITY CONTROL DATA



Specific detection of Chk1 protein in HeLa cell lysate by Western blot analysis using Chk1 Monoclonal Antibody (8C10).

## TECHNICAL INFORMATION

**Source:** Anti-Chk1 is a mouse monoclonal antibody raised against *E. coli*-expressed recombinant human Chk1 protein.

**Specificity and Sensitivity:** Anti-Chk1 specifically detects Chk1 protein and does not cross-react with related proteins.

**Storage Buffer:** 0.1 M PBS (pH 7.2), 0.1% glycine, 0.1% sodium azide, 0.1% BSA, 50% glycerol.

**Storage:** Store at -20°C, 4°C for frequent use. Avoid repeated freeze-thaw cycles.

## APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	n/d
IHC	n/d
ICC	n/d
FACS	n/d

*\*Optimal dilutions must be determined by end user.*

