Revision 3

#2656 Store at -20C

CK2α Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk	Endogenous	42	Rabbit	#P68400	1457

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

This antibody detects endogenous levels of total CK2α 1 protein. This antibody may cross-react with CK2α prime.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to amino acid residues near the carboxy-terminus of human CK2α1. Antibodies are purified by protein A and peptide affinity chromatography.

Background

CK2 (formerly called Casein Kinase II) is a highly conserved protein kinase with more than 300 substrates regulating cell growth, cell death, and cell survival. CK2 has been implicated in the response to UV irradiation-induced DNA damage, targeting XRCC1 (1) and BRCA1 (2) as well as regulating p53 tumor suppressor protein functions (3). Furthermore, CK2 plays a key role in NF-κB activation (4). UV irradiation stimulates CK2-mediated phosphorylation of several carboxy-terminal residues within IκBα, resulting in IκBα proteasomal degradation and the release and nuclear translocation of active NF-κB. CK2 is also dysregulated in many cancers (5) and neurodegenerative diseases such as Alzheimer's and Parkinson's diseases (6). Structurally, CK2 is a multimeric protein complex consisting of two catalytic subunits (α or α') and two regulatory β subunits (7). CK2 is distributed ubiquitously and is apparently constitutively active (7). While cell cycle-dependent Ser-Pro phosphorylation sites have been identified on CK2α and CK2β, Tyr255 phosphorylation by the Src-related kinase c-Fgr seems to have the greatest effect on CK2α activity (8,9).

Background References

1. Morales, J.C. and Carpenter, P.B. (2004) *Sci Aging Knowledge Environ* 2004, pe24.
2. O'Brien, K.A. et al. (1999) *Biochem Biophys Res Commun* 260, 658-64.
3. Cox, M.L. and Meek, D.W. (2010) *Cell Signal* 22, 564-71.
4. Dominguez, I. et al. (2009) *Cell Mol Life Sci* 66, 1850-7.
5. Trembley, J.H. et al. *Biofactors* 36, 187-95.
6. Perez, D.I. et al. (2010) *Med Res Rev*, Epub ahead of print.
7. Bosc, D.G. et al. (1995) *J Biol Chem* 270, 25872-8.
8. Donella-Deana, A. et al. (2003) *Biochem J* 372, 841-9.
9. Litchfield, D.W. (2003) *Biochem J* 369, 1-15.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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