Revision 5

#4123 Store at -20C

# KAP-1 Antibody

Cell Signaling TECHNOLOGY®

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|---|
| W, IP, IF-IC | H M R Mk | Endogenous | 100 | Rabbit | #Q13263 | 10155 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |
| Immunoprecipitation | 1:50 |
| Immunofluorescence (Immunocytochemistry) | 1:100 - 1:400 |

## 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

KAP-1 Antibody detects endogenous levels of total KAP-1 protein.

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to amino acids near the carboxy terminus of human KAP-1. Antibodies are purified by peptide affinity chromatography.

## Background

KRAB-associated protein 1 (KAP-1) is a member of the TIF1 (transcriptional intermediary factor 1) family, a group of transcriptional regulators that play key roles in development and differentiation. Members of this family are characterized by the presence of two conserved motifs – an N-terminal RING-B box-coiled-coil motif and a C-terminal PHD finger and bromodomain unit (1,2). KAP-1 is a corepressor for KRAB (Kruppel associated box) domain-containing zinc finger proteins. The KRAB domain containing zinc finger proteins are a large group of transcription factors that are vertebrate-specific, varied in their expression patterns between species, and thought to regulate gene transcription programs that control speciation (3,4). KAP-1 has been shown to be essential for early embryonic development and spermatogenesis (6,5). It functions to either activate or repress transcription in response to environmental or developmental signals by chromatin remodeling and histone modification. The recruitment and association of KAP-1 with heterochromatin protein (HP1) is essential for transcriptional repression and for progression through differentiation of F9 embryonic carcinoma cells (6,7). KAP-1 also plays a role in the DNA damage response. Phosphorylation of KAP-1 on Ser824 occurs in an ATM-dependent manner in response to genotoxic stress and is thought to be essential for chromatin relaxation, which is, in turn, required for the DNA damage response (8).

## Background References

1. Le Douarin, B. et al. (1995) *EMBO J.* 14, 2020-2033.
2. Le Douarin, B. et al. (1996) *EMBO J.* 15, 6701-6715.
3. Friedman, J.R. et al. (1996) *Genes Dev.* 10, 2067-2078.
4. Krebs, C.J. et al. (2005) *Genomics* 85, 752-761.
5. Weber, P. et al. (2002) *Development* 129, 2329-2337.
6. Cammas, F. et al. (2004) *Genes Dev.* 18, 2147-2160.
7. Cammas, F. et al. (2007) *Differentiation* 75, 627-37.
8. Ziv, Y. et al. (2006) *Nat. Cell Biol.* 8, 870-876.

## 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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

## Cross-Reactivity Key

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

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