Revision 1

Store at -20C

#2990

ASF1A (C6E10) Rabbit mAb

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:
WB, IP, IHC-P, IF-IC	H M Mk	Endogenous	20	Rabbit IgG	#Q9Y294	25842

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:800
Immunofluorescence (Immunocytochemistry)	1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

ASF1A (C6E10) Rabbit mAb detects endogenous levels of total ASF1A protein. The antibody does not cross-react with ASF1B protein.

Species predicted to react based on 100% sequence homology:

Chicken, Bovine

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of the human ASF1A protein.

Background

ASF1 was first identified in *S. cerevisiae* based on its ability to de-repress transcriptional silencing when overexpressed (1). While only one gene exists in yeast and *Drosophila*, mammalian cells contain the two highly homologous ASF1A and ASF1B genes (2). ASF1A and ASF1B function as histone chaperones, delivering histone H3/H4 dimers to CAF-1 or HIRA histone deposition complexes to facilitate replication-coupled and replication-independent nucleosome assembly on DNA (2-5). Both ASF1A and ASF1B bind to CAF-1, but only ASF1A binds to HIRA (5). In addition to playing a role in DNA replication and gene silencing, ASF1 functions in DNA damage repair, genome stability and cellular senescence. Deletion of ASF1 in yeast and *Drosophila* confers sensitivity to various DNA damaging agents and inhibitors of DNA replication, increases genomic instability and sister chromatid exchange, and activates the DNA damage checkpoint (6-8). Depletion of both ASF1A and ASF1B in mammalian cells results in the accumulation of cells in S phase, increased phosphorylation of H2A.X, centrosome amplification and apoptosis (9,10). ASF1A is required for the formation of senescence-associated heterochromatin foci (SAHF), with overexpression of ASF1A inducing senescence in primary cells (4). Both ASF1A and ASF1B are phosphorylated in S phase by the Tousled-like kinases TLK1 and TLK2, and are dephosphorylated when TLK1 and TLK2 are inactivated by Chk1 kinase in response to replicative stress (11,12). The function of ASF1 phosphorylation is not yet understood.

Background References

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4. Zhang, R. et al. (2005) *Dev. Cell.* 8, 19-30.
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7. Prado, F. et al. (2004) *EMBO Rep.* 5, 497-502.
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11. Silljé, H.H. and Nigg, E.A. (2001) *Curr. Biol.* 11, 1068-1073.
12. Carrera, P. et al. (2003) *Genes Dev.* 17, 2578-2590.

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 **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)
IF-IC: Immunofluorescence (Immunocytochemistry)

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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Limited Uses