Revision 8

#5318 Store at -20C

# AIF (D39D2) XP® 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: |
|---|---|---|---|---|---|---|
| W, IP, IHC-P, IF-F, IF-IC | H M R Mk | Endogenous | 67 | Rabbit IgG | #O95831 | 9131 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |
| Immunoprecipitation | 1:100 |
| Immunohistochemistry (Paraffin) | 1:50 - 1:200 |
| Immunofluorescence (Frozen) | 1:200 - 1:400 |
| Immunofluorescence (Immunocytochemistry) | 1:200 - 1:400 |

## 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.

For a carrier free (BSA and azide free) version of this product see product #62147.

## Specificity/Sensitivity

AIF (D39D2) XP® Rabbit mAb detects endogenous levels of total AIF protein.

## Species predicted to react based on 100% sequence homology

Bovine, Dog

## Source / Purification

Monoclonal antibody was produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala520 of human AIF protein.

## Background

Apoptosis-inducing factor (AIF, PDCD8) is a ubiquitously expressed flavoprotein that plays a critical role in caspase-independent apoptosis (reviewed in 1,2). AIF is normally localized to the mitochondrial intermembrane space and released in response to apoptotic stimuli (3). Treatment of isolated nuclei with recombinant AIF leads to early apoptotic events, such as chromatin condensation and large-scale DNA fragmentation (3). Studies of AIF knockout mice have shown that the apoptotic activity of AIF is cell type and stimuli-dependent. Also noted was that AIF was required for embryoid body cavitation, representing the first wave of programmed cell death during embryonic morphogenesis (4). Structural analysis of AIF revealed two important regions, the first having oxidoreductase activity and the second being a potential DNA binding domain (3,5). While AIF is redox-active and can behave as an NADH oxidase, this activity is not required for inducing apoptosis (6). Instead, recent studies suggest that AIF has dual functions, a pro-apoptotic activity in the nucleus via its DNA binding and an anti-apoptotic activity via the scavenging of free radicals through its oxidoreductase activity (2,7).

## Background References

1. Daugas, E. et al. (2000) *FEBS Lett* 476, 118-23.
2. Lipton, S.A. and Bossy-Wetzel, E. (2002) *Cell* 111, 147-50.
3. Susin, S.A. et al. (1999) *Nature* 397, 441-6.
4. Joza, N. et al. (2001) *Nature* 410, 549-54.
5. Ye, H. et al. (2002) *Nat Struct Biol* 9, 680-4.
6. Miramar, M.D. et al. (2001) *J Biol Chem* 276, 16391-8.
7. Klein, J.A. et al. (2002) *Nature* 419, 367-74.
8. Kozako, T. et al. (2015) *Sci Rep* 5, 11345.

## 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

**W:** Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin) **IF-F:** Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry)

## Cross-Reactivity Key

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

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