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# AIF Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1595a

## Product Information

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| **Application** | WB, IHC, FC, ICC, E |
| **Primary Accession** | O95831 |
| **Reactivity** | Human, Mouse, Rat, Monkey |
| **Host** | Mouse |
| **Clonality** | Monoclonal |
| **Clone Names** | 4E7 |
| **Isotype** | IgG2b |
| **Calculated MW** | 66901 |
| **Description** | This gene encodes a flavoprotein essential for nuclear disassembly in apoptotic cells, and it is found in the mitochondrial intermembrane space in healthy cells. Induction of apoptosis results in the translocation of this protein to the nucleus where it affects chromosome condensation and fragmentation. In addition, this gene product induces mitochondria to release the apoptogenic proteins cytochrome c and caspase-9. Mutations in this gene cause combined oxidative phosphorylation deficiency 6, which results in a severe mitochondrial encephalomyopathy. Alternative splicing results in multiple transcript variants. A related pseudogene has been identified on chromosome 10 |
| **Immunogen** | Purified recombinant fragment of human AIF expressed in E. Coli. |
| **Formulation** | Ascitic fluid containing 0.03% sodium azide. |

## Additional Information

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| **Gene ID** | 9131 |
| **Other Names** | Apoptosis-inducing factor 1, mitochondrial, 1.1.1.-, Programmed cell death protein 8, AIFM1, AIF, PDCD8 |
| **Dilution** | WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1:10~50 ICC~~N/A E~~1/10000 |
| **Storage** | Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | AIF Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

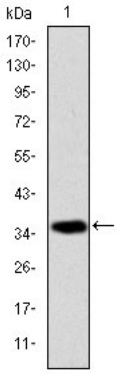
| | |
|---|---|
| **Name** | AIFM1 ( HGNC:8768) |
| **Synonyms** | AIF, PDCD8 |
| **Function** | Functions both as NADH oxidoreductase and as regulator of apoptosis (PubMed:17094969, PubMed:20362274, PubMed:23217327, PubMed:33168626). In response to apoptotic stimuli, it is released from the mitochondrion intermembrane space into the cytosol and to the nucleus, where it functions as a proapoptotic factor in a caspase- independent pathway (PubMed:20362274). Release into the cytoplasm is mediated upon binding to poly-ADP-ribose chains (By similarity). The soluble form (AIFsol) found in the nucleus induces 'parthanatos' i.e. caspase-independent fragmentation of chromosomal DNA (PubMed:20362274). Binds to DNA in a sequence-independent manner (PubMed:27178839). Interacts with EIF3G, and thereby inhibits the EIF3 machinery and protein synthesis, and activates caspase-7 to amplify apoptosis (PubMed:17094969). Plays a critical role in caspase-independent, pyknotic cell death in hydrogen peroxide-exposed cells (PubMed:19418225). In contrast, participates in normal mitochondrial metabolism. Plays an important role in the regulation of respiratory chain biogenesis by interacting with CHCHD4 and controlling CHCHD4 mitochondrial import (PubMed:26004228). |
| **Cellular Location** | Mitochondrion intermembrane space. Mitochondrion inner membrane. Cytoplasm. Nucleus. Cytoplasm, perinuclear region. Note=Proteolytic cleavage during or just after translocation into the mitochondrial intermembrane space (IMS) results in the formation of an inner-membrane-anchored mature form (AIFmit). During apoptosis, further proteolytic processing leads to a mature form, which is confined to the mitochondrial IMS in a soluble form (AIFsol). AIFsol is released to the cytoplasm in response to specific death signals, and translocated to the nucleus, where it induces nuclear apoptosis (PubMed:15775970). Release into the cytoplasm is mediated upon binding to poly-ADP-ribose chains (By similarity) Translocation into the nucleus is promoted by interaction with (auto- poly-ADP-ribosylated) processed form of PARP1 (PubMed:33168626) Colocalizes with EIF3G in the nucleus and perinuclear region (PubMed:17094969). {ECO:0000250\|UniProtKB:Q9Z0X1, ECO:0000269\|PubMed:15775970, ECO:0000269\|PubMed:17094969, ECO:0000269\|PubMed:33168626} [Isoform 4]: Mitochondrion. Cytoplasm, cytosol. Note=In pro-apoptotic conditions, is released from mitochondria to cytosol in a calpain/cathepsin-dependent manner. |
| **Tissue Location** | Expressed in all tested tissues (PubMed:16644725). Detected in muscle and skin fibroblasts (at protein level) (PubMed:23217327). Expressed in osteoblasts (at protein level) (PubMed:28842795). [Isoform 4]: Expressed in all tested tissues except brain. |

## References

1. Apoptosis. 2009 Jun;14(6):796-808. 2. PLoS One. 2009;4(2):e4394. Epub 2009 Feb 6.

## Images

Figure 1: Western blot analysis using AIF mAb against human AIF (AA: 1-261) recombinant protein. (Expected MW is 35.6 kDa)



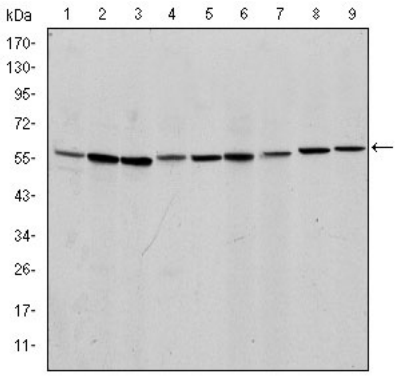




Figure 2: Western blot analysis using AIF mouse mAb against NIH/3T3 (1), Jurkat (2), Hela (3), HepG2 (4), MOLT4 (5), C6 (6), RAJI (7), Cos7 (8) and PC-12 (9) cell lysate.

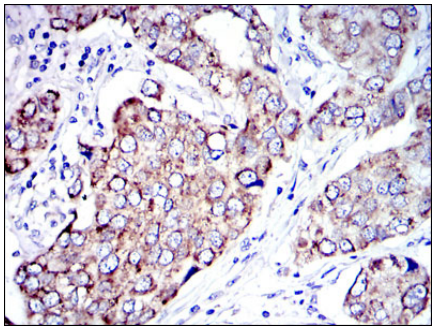


Figure 3: Immunohistochemical analysis of paraffin-embedded human breast cancer tissues using AIF mouse mAb with DAB staining.

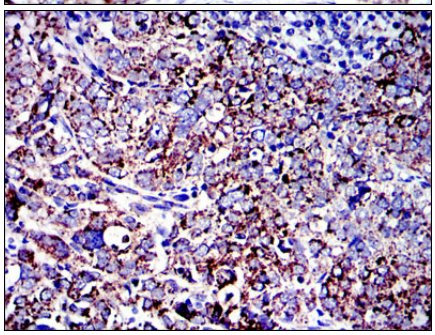


Figure 4: Immunohistochemical analysis of paraffin-embedded human cervical cancer tissues using AIF mouse mAb with DAB staining.

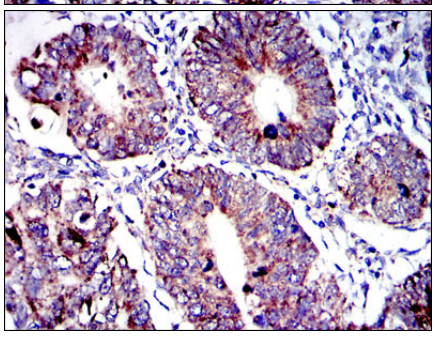
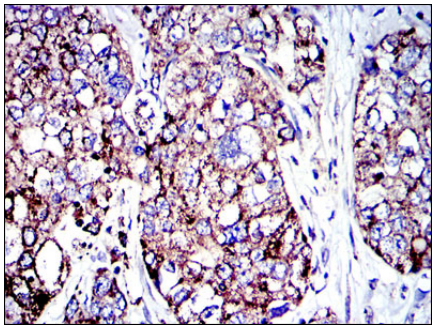


Figure 5: Immunohistochemical analysis of paraffin-embedded human rectum cancer tissues using AIF mouse mAb with DAB staining.

Figure 6: Immunohistochemical analysis of paraffin-embedded human lung cancer tissues using AIF mouse mAb with DAB staining.



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