Atlas of Genetics and Cytogenetics in Oncology and Haematology

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Gene Section
Mini Review

AIFM2 (apoptosis-inducing factor, mitochondrion-associated, 2)

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Identity

Other names: AMID; PRG3; RP11-367H5.2

HGNC (Hugo): AIFM2

Location: 10q22.1

DNA/RNA

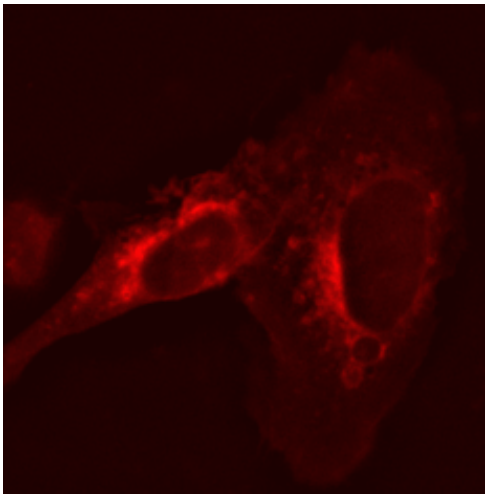
Description

The gene spans approximately 20.66 kb. Number of exons: 14, minus strand.

Transcription

The length of AIFM2 transcript is 3240 bp.

Protein



Stably transfected (by lipofection) living cells U-2 OS (human osteosarcoma) cell line with plasmid producing red fluorescent fusion protein AIFM2-tHcRed.

Description

AIFM2 is oxidoreductase of 373 AA lenght. It is predicted to take part in caspase-independent apoptosis similarly to homologous AIFM1 (AIF, PDCD8). AIFM2 is p53-responsive gene and production of AIFM2 was found to be suppressed in many human cancers.

Expression

AIFM2 was detected in most healthy tissues in form of two transcripts (1.8 and 4.0 kb). It is highly expressed in heart, moderately in liver and skeletal muscles, and expressed at low levels in placenta, lung, kidney, and pancreas.

Localisation

Cytoplasmic side of cellular membranes.

Function

Oxidoreductase, that may be important in mediating a TP53/p53-dependent apoptotic response. Predicted to be caspase-independent effector of apoptotic cell death, but not shown by other authors. Function of this protein is thus unknown.

Homology

Homologous to AIFM1 (AIF, PDCD8). They share 22% aminoacid identity. It belongs to the FAD-dependent oxidoreductase family.

Implicated in

Apoptosis and Cancer

Note

AIFM2 expression was found to be activated by overexpression of p53, which leads to cell cycle arrest

or apoptosis. Inactivation of p53 was observed in many human cancers.

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