

IA-1 Antibody

Catalog # ASC10988

Product Information

Application	WB, E
Primary Accession	Q01101
Other Accession	NP_002187 , 4504713
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	52923
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	IA-1 antibody can be used for detection of IA-1 by Western blot at 1 μ g/mL.

Additional Information

Gene ID	3642
Other Names	Insulinoma-associated protein 1, Zinc finger protein IA-1, INSM1, IA1
Target/Specificity	INSM1;
Reconstitution & Storage	IA-1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	IA-1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	INSM1
Synonyms	IA1
Function	Sequence-specific DNA-binding transcriptional regulator that plays a key role in neurogenesis and neuroendocrine cell differentiation during embryonic and/or fetal development. Binds to the consensus sequence 5'-[TG][TC][TC][TT][GA]GGG[CG]A-3' in target promoters. Acts as a transcriptional repressor of NEUROD1 and INS expression via its interaction with cyclin CCND1 in a cell cycle- independent manner. Negatively regulates skeletal muscle-specific gene expression in endocrine cells of the pituitary by inhibiting the Notch signaling pathway. Represses target gene transcription by recruiting chromatin-modifying factors, such as HDAC1, HDAC2, HDAC3, KDM1A and RCOR1 histone deacetylases. Binds to its own promoter,

suggesting autoregulation as a self-control feedback mechanism. Competes with histone H3 for the same binding site on the histone demethylase complex formed by KDM1A and RCOR1, and thereby inhibits demethylation of histone H3 at 'Lys-4' (PubMed:[23721412](#)). Promotes the generation and expansion of neuronal basal progenitor cells in the developing neocortex. Involved in the differentiation of endocrine cells of the developing anterior pituitary gland, of the pancreas and intestine, and of sympatho-adrenal cells in the peripheral nervous system. Promotes cell cycle signaling arrest and inhibition of cellular proliferation.

Cellular Location

Nucleus {ECO:0000250|UniProtKB:Q63ZV0}.

Tissue Location

Expressed in pancreatic duct cells. Expressed in several tumor cell lines of neuroendocrine origin including pheochromocytoma, medullary thyroid carcinoma, insulinoma, medulloblastoma, retinoblastoma, pheochromocytoma, medullary thyroid carcinoma and small cell lung carcinoma.

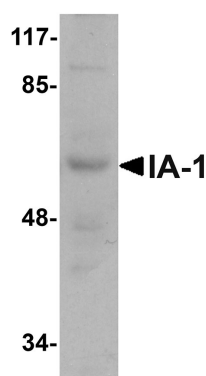
Background

IA-1 Antibody: IA-1, also known as INSM1, is an essential five zinc-finger transcription factor that while initially identified from an insulinoma cDNA library, is expressed in the developing nervous system. Specifically, IA-1 is expressed as early as E9.5 in mice in the fore-, mid- and hindbrain, spinal cord, retina, and olfactory bulb. It is thought that IA-1 functions as a transcriptional repressor, and is a part of several signaling pathways including those of Notch and sonic hedgehog in addition to that of Ngn3 during pancreatic endocrine cell differentiation. IA-1 is also expressed in multiple tumors, including the majority of neuroendocrine tumors tested so far as well as nearly 100% of all small cell lung carcinomas, indicating that IA-1 may be an important target in cancer therapy.

References

Lan MS, Li Q, Lu J, et al. Genomic organization, 5'-upstream sequence, and chromosomal localization of an insulinoma-associated intronless gene, IA-1. *J. Biol. Chem.*1994; 269:14170-4.
Jacob J, Storm R, Castro DS, et al. Insm (IA-1) is an essential component of the regulatory network that specifies monoaminergic neuronal phenotypes in the vertebrate hindbrain. *Dev.*2009; 136:2477-85.
Breslin MB, Zhu M, and Lan MS. NeuroD1/E47 regulates the E-box element of a novel zinc-finger transcription factor, IA-1, in developing nervous system. *J. Biol. Chem.*2003; 278:38991-7.
Nelson BR, Hartman BH, Georgi SA, et al. Transient inactivation of Notch signaling synchronizes differentiation of neural progenitor cells. *Dev. Biol.*2007; 304:479-98.

Images



Western blot analysis of IA-1 in rat thymus tissue lysate with IA-1 antibody at 1 µg/mL.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.