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BANF1 Antibody

Catalog # ASC10491

Product Information

Application	WB, IF, E
Primary Accession	O75531
Other Accession	AAH05942, 13543577
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	10059
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	BANF1 antibody can be used for detection of BANF1 by Western blot at 0.5 - 2 g/mL. Despite its predicted molecular weight, BANF1 often migrates at a higher size in SDS-PAGE. Antibody can also be used for immunoflourescence starting at 20 g/mL.

Additional Information

Gene ID	8815
Other Names	BANF1 Antibody: BAF, NGPS, BCRP1, D14S1460, BAF, BCRG1, Barrier-to-autointegration factor, Breakpoint cluster region protein 1, barrier to autointegration factor 1
Target/Specificity	BANF1;
Reconstitution & Storage	BANF1 antibody can be stored at 4℃ for three months and -20℃, 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	BANF1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BANF1 {ECO:0000303|PubMed:21549337, ECO:0000312|HGNC:HGNC:17397}
Function	Non-specific DNA-binding protein that plays key roles in mitotic nuclear reassembly, chromatin organization, DNA damage response, gene expression and intrinsic immunity against foreign DNA (PubMed:10908652, PubMed:11792822, PubMed:12163470, PubMed:18005698, PubMed:25991860, PubMed:28841419, PubMed:31796734, PubMed:32792394). Contains two non-specific double-stranded DNA

	(dsDNA)-binding sites which promote DNA cross-bridging (PubMed:9465049). Plays a key role in nuclear membrane reformation at the end of mitosis by driving formation of a single nucleus in a spindle-independent manner (PubMed:28841419). Transiently cross-bridges anaphase chromosomes via its ability to bridge distant DNA sites, leading to the formation of a dense chromatin network at the chromosome ensemble surface that limits membranes to the surface (PubMed:28841419). Also acts as a negative regulator of innate immune activation by restricting CGAS activity toward self-DNA upon acute loss of nuclear membrane integrity (PubMed:32792394). Outcompetes CGAS for DNA-binding, thereby preventing CGAS activation and subsequent damaging autoinflammatory responses (PubMed:32792394). Also involved in DNA damage response: interacts with PARP1 in response to oxidative stress, thereby inhibiting the ADP-ribosyltransferase activity of PARP1 (PubMed:31796734). Involved in the recognition of exogenous dsDNA in the cytosol: associates with exogenous dsDNA immediately after its appearance in the cytosol at endosome breakdown and is required to avoid autophagy (PubMed:25991860). In case of poxvirus infection, has an antiviral activity by blocking viral DNA replication (PubMed:18005698).
Cellular Location	Nucleus. Chromosome. Nucleus envelope. Cytoplasm. Note=Significantly enriched at the nuclear inner membrane, diffusely throughout the nucleus during interphase and concentrated at the chromosomes during the M-phase (PubMed:16495336, PubMed:24600006). The phosphorylated form (by VRK1) shows a cytoplasmic localization whereas the unphosphorylated form locates almost exclusively in the nucleus (PubMed:16495336, PubMed:24600006). May be included in HIV-1 virions via its interaction with viral GAG polyprotein (PubMed:14645565)
Tissue Location	Widely expressed. Expressed in colon, brain, heart, kidney, liver, lung, ovary, pancreas, placenta, prostate, skeletal muscle, small intestine, spleen and testis. Not detected in thymus and peripheral blood leukocytes.

Background

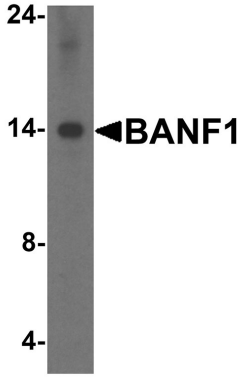
BANF1 Antibody: Barrier-to-autointegration factor 1 (BANF1) is a conserved chromatin protein that non-specifically binds double-stranded DNA. BAF also interacts with a family of nuclear proteins that include LAP2, emerin, and MAN1. It is also a host cell component of retroviral pre-integration complexes (PICs), including that of HIV. BAF will bind to p55 Gag (the structural precursor of HIV-1 virions) as well as its cleaved product matrix. In addition to being a host cell component of the PIC, it is thought that BAF is also present at low levels in incoming virions, and thus might contribute to the assembly or activity of HIV-1 PICs through direct binding to matrix as well as DNA.

References

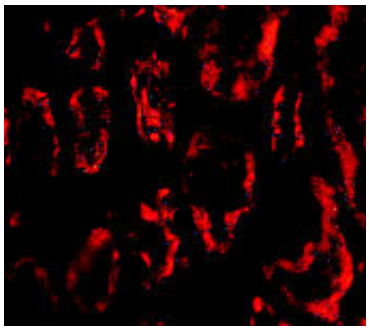
Furukawa K. LAP2 binding protein 1 (L2BP1/BAF) is a candidate mediator of LAP2-chromatin interaction. J. Cell Sci. 1999; 112:2485-92.
Cai M, Huang Y, Ghirlando R, et al. Solution structure of the constant region of nuclear envelope protein LAP2 reveals two LEM-domain structures: one binds BAF and the other binds DNA. EMBO J. 2001; 20:4399-407.
Chen H and Engelman A. The barrier-to-autointegration protein is a host factor for HIV type 1 integration. Proc. Natl. Acad. Sci. USA 1998; 95:15270-4.

Images

Western blot analysis of BANF1 in Hela cell lysate with



BANF1 antibody at 1 µg/mL.



Immunofluorescence of BANF1 in human kidney tissue with BANF1 antibody at 20 µg/mL.

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