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Anti-AKAP13 Antibody

Catalog # AP50968

Product Information

Application	WB, IHC, IF/IC
Primary Accession	Q12802
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	307550

Additional Information

Gene ID	11214
Other Names	BRX; HT31; LBC; A-kinase anchor protein 13; AKAP-13; AKAP-Lbc; Breast cancer nuclear receptor-binding auxiliary protein; Guanine nucleotide exchange factor Lbc; Human thyroid-anchoring protein 31; Lymphoid blast crisis oncogene; LBC oncogene; Non-oncogenic Rho GTPase-specific GTP exchange factor; Protein kinase A-anchoring protein 13; PRKA13; p47
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human AKAP13. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	AKAP13
Function	Scaffold protein that plays an important role in assembling signaling complexes downstream of several types of G protein-coupled receptors. Activates RHOA in response to signaling via G protein- coupled receptors via its function as Rho guanine nucleotide exchange factor (PubMed:11546812, PubMed:15229649, PubMed:23090968, PubMed:24993829, PubMed:25186459). May also activate other Rho family members (PubMed:11546812). Part of a kinase signaling complex that links ADRA1A and ADRA1B adrenergic receptor signaling to the activation of downstream p38 MAP kinases, such as MAPK11 and MAPK14 (PubMed:17537920, PubMed:21224381, PubMed:23716597). Part of a signaling complex that links ADRA1B signaling to the activation of RHOA and IKBKB/IKKB, leading to increased NF-kappa-B transcriptional activity (PubMed:23090968). Part of a

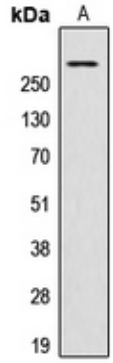
	RHOA-dependent signaling cascade that mediates responses to lysophosphatidic acid (LPA), a signaling molecule that activates G protein-coupled receptors and potentiates transcriptional activation of the glucocorticoid receptor NR3C1 (PubMed:16469733). Part of a signaling cascade that stimulates MEF2C- dependent gene expression in response to lysophosphatidic acid (LPA) (By similarity). Part of a signaling pathway that activates MAPK11 and/or MAPK14 and leads to increased transcription activation of the estrogen receptors ESR1 and ESR2 (PubMed:11579095, PubMed:9627117). Part of a signaling cascade that links cAMP and EGFR signaling to BRAF signaling and to PKA-mediated phosphorylation of KSR1, leading to the activation of downstream MAP kinases, such as MAPK1 or MAPK3 (PubMed:21102438). Functions as a scaffold protein that anchors cAMP- dependent protein kinase (PKA) and PRKD1. This promotes activation of PRKD1, leading to increased phosphorylation of HDAC5 and ultimately cardiomyocyte hypertrophy (By similarity). Has no guanine nucleotide exchange activity on CDC42, Ras or Rac (PubMed:11546812). Required for normal embryonic heart development, and in particular for normal sarcomere formation in the developing cardiomyocytes (By similarity). Plays a role in cardiomyocyte growth and cardiac hypertrophy in response to activation of the beta-adrenergic receptor by phenylephrine or isoproterenol (PubMed:17537920, PubMed:23090968). Required for normal adaptive cardiac hypertrophy in response to pressure overload (PubMed:23716597). Plays a role in osteogenesis (By similarity).
Cellular Location	Cytoplasm, cytosol. Cytoplasm Cytoplasm, cell cortex. Nucleus. Membrane; Peripheral membrane protein Note=Colocalizes with the actin cytoskeleton at the cell cortex
Tissue Location	Detected in mammary gland (PubMed:9627117). Detected in heart (at protein level) (PubMed:11546812). Expressed as a 5.3 kb transcript in hematopoietic cells, skeletal muscle, lung, heart, estrogen-responsive reproductive tissues, including breast ductal epithelium. Also found in testis and breast cancer cell lines Predominantly expressed as a 10 kb transcript in the heart and at lower levels in the lung, placenta, kidney, pancreas, skeletal muscle and liver. Transcripts of between 6-9 kb are also expressed in myeloid and lymphoid lineages, a variety of epithelial tissues, and in skeletal muscle.

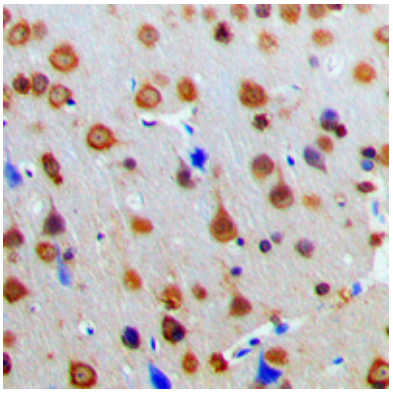
References

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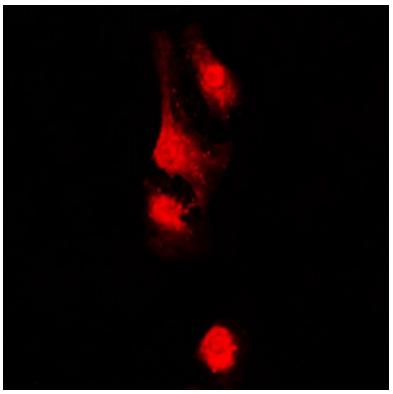
Images

Western blot analysis of AKAP13 expression in HeLa (A) whole cell lysates. (Predicted band size: 307 kD; Observed band size: 308 kD)





Immunohistochemical analysis of AKAP13 staining in human brain formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of AKAP13 staining in HeLa cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with a DyLight 594-conjugated secondary antibody (red) in PBS at room temperature in the dark.

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