

AKAP9 (A kinase (PRKA) anchor protein (yotiao) 9)

Identity

| | |
|-------------|--|
| Other names | AKAP350 AKAP450 CG-NAP HYPERION KIAA0803 MU-RMS-40.16A PRKA9 YOTIAO |
| Hugo | AKAP9 |
| Location | 7q21.2 |

DNARNA

| | |
|---------------|---|
| Description | AKAP9 gene consists of 51 encoding exons with a total gene size of 169797 bp. |
| Transcription | The AKAP9 transcript has an open reading frame (ORF) of 11724 bp. Four different transcript variants have been identified (NM147171, NM005751, NM147185, NM147166). |

Protein

| | |
|--------------|--|
| Description | The 11.7 kb ORF encodes for a 3908 aa protein with a predicted size of 453 kDa. Four different protein products have been described (NP005742.4, NP671695.1, NP671700.1, NP671714.1). |
| Localisation | Centrosomes, Golgi apparatus. |
| Function | AKAP9 belongs to the family of A-Kinase Anchor Proteins (AKAPs), which are scaffold proteins able to bind the type II regulatory subunit (RII) of cAMP dependent Protein Kinase A (PKA) and several other protein kinases and phosphatases and to anchor them to specific intracellular compartments. AKAP9 shows centrosome and Golgi compartmentalization. Various splice variants of the transcript are found in different human tissues. The AKAP9 protein contains the PKA binding domain, a large coiled-coil domain and C-terminal centrosome binding domain. |

Implicated in

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|--------------|--|
| Entity | Papillary Thyroid Carcinoma (PTC) |
| Cytogenetics | inv(7)(q21-22q34) with AKAP9-BRAF fusion |

Breakpoints

| | |
|------|--|
| Note | Breakpoint in AKAP9-BRAF fusion is located within intron 8 of the gene. In this fusion, exons 1-8 of AKAP9 are fused with last 10 exons 9-18 of BRAF . In the fusion, AKAP9 lacks the centrosome binding domain and, as a result, the AKAP9-BRAF protein loses its cytoplasmic compartmentalization and appears to be diffusely distributed in the cytoplasm, as detected by immunofluorescence. |
|------|--|

External links

Nomenclature

| | |
|-----------------------------|---|
| Hugo | AKAP9 |
| GDB | AKAP9 |
| Entrez Gene | AKAP9 10142 A kinase (PRKA) anchor protein (yotiao) 9 |

| Cards | |
|--|--|
| GeneCards | AKAP9 |
| Ensembl | AKAP9 |
| Genatlas | AKAP9 |
| GeneLynx | AKAP9 |
| eGenome | AKAP9 |
| euGene | 10142 |
| Genomic and cartography | |
| GoldenPath | AKAP9 - 7q21.2 chr7:91408128-91577925 + 7q21-q22 (hg18-Mar_2006) |
| Ensembl | AKAP9 - 7q21-q22 [CytoView] |
| NCBI | Mapview |
| OMIM | Disease map [OMIM] |
| HomoloGene | AKAP9 |
| Gene and transcription | |
| Genbank | AB018346 [ENTREZ] |
| Genbank | AB019691 [ENTREZ] |
| Genbank | AF026245 [ENTREZ] |
| Genbank | AF083037 [ENTREZ] |
| Genbank | AF091711 [ENTREZ] |
| RefSeq | NM_005751 [SRS] NM_005751 [ENTREZ] |
| RefSeq | NM_147166 [SRS] NM_147166 [ENTREZ] |
| RefSeq | NM_147171 [SRS] NM_147171 [ENTREZ] |
| RefSeq | NM_147185 [SRS] NM_147185 [ENTREZ] |
| RefSeq | AC_000050 [SRS] AC_000050 [ENTREZ] |
| RefSeq | AC_000068 [SRS] AC_000068 [ENTREZ] |
| RefSeq | NC_000007 [SRS] NC_000007 [ENTREZ] |
| RefSeq | NT_007933 [SRS] NT_007933 [ENTREZ] |
| RefSeq | NT_079595 [SRS] NT_079595 [ENTREZ] |
| RefSeq | NW_923574 [SRS] NW_923574 [ENTREZ] |
| AceView | AKAP9 AceView - NCBI |
| Unigene | Hs.651221 [SRS] Hs.651221 [NCBI] HS651221 [spliceNest] |
| Fast-db | 8192 |
| Protein : pattern, domain, 3D structure | |
| SwissProt | Q5GIA7 [SRS] Q5GIA7 [EXPASY] Q5GIA7 [INTERPRO] |
| Interpro | IPR009053 Prefoldin [SRS] IPR009053 Prefoldin [EBI] |
| CluSTr | Q5GIA7 |
| Blocks | Q5GIA7 |
| HPRD | 04921 |
| Protein Interaction databases | |
| DIP | Q5GIA7 |
| IntAct | Q5GIA7 |
| Polymorphism : SNP, mutations, diseases | |
| OMIM | 604001 [map] |

[GENECLINICS](#) [604001](#)

[SNP](#) [AKAP9](#) [dbSNP-NCBI]
[SNP](#) [NM_005751](#) [SNP-NCI]
[SNP](#) [NM_147166](#) [SNP-NCI]
[SNP](#) [NM_147171](#) [SNP-NCI]
[SNP](#) [NM_147185](#) [SNP-NCI]
[SNP](#) [AKAP9](#) [GeneSNPs - Utah] [AKAP9](#) [HGBASE - SRS]
[HAPMAP](#) [AKAP9](#) [HAPMAP]
[COSMIC](#) [AKAP9](#) [Somatic mutation (COSMIC-CGP-Sanger)]
[HGMD](#) [AKAP9](#)

General knowledge

[Family Browser](#) [AKAP9](#) [UCSC Family Browser]
[SOURCE](#) [NM_005751](#)
[SOURCE](#) [NM_147166](#)
[SOURCE](#) [NM_147171](#)
[SOURCE](#) [NM_147185](#)
[SMD](#) [Hs.651221](#)
[SAGE](#) [Hs.651221](#)
[GO](#) [receptor binding](#) [Amigo] [receptor binding](#)
[GO](#) [cytoplasm](#) [Amigo] [cytoplasm](#)
[GO](#) [Golgi apparatus](#) [Amigo] [Golgi apparatus](#)
[GO](#) [centrosome](#) [Amigo] [centrosome](#)
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[GO](#) [transport](#) [Amigo] [transport](#)
[GO](#) [signal transduction](#) [Amigo] [signal transduction](#)
[GO](#) [synaptic transmission](#) [Amigo] [synaptic transmission](#)
[BIOCARTA](#) [Protein Kinase A at the Centrosome](#) [[Genes](#)]
[PubGene](#) [AKAP9](#)

Other databases

Probes

[Probe](#) [AKAP9 Related clones \(RZPD - Berlin\)](#)

PubMed

[PubMed](#) [26 Pubmed reference\(s\) in LocusLink](#)

Bibliography

AKAP350, a multiply spliced protein kinase A-anchoring protein associated with centrosomes.

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J Biol Chem. 1999; 274(5): 3055-3066.

Medline [9915845](#)

Characterization of a novel giant scaffolding protein, CG-NAP, that anchors multiple signaling enzymes to centrosome and the golgi apparatus.

Takahashi M, Shibata H, Shimakawa M, Miyamoto M, Mukai H, Ono Y.

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Medline [10358086](#)

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Witczak O, Skalhegg BS, Keryer G, Bornens M, Tasken K, Jahnsen T, Orstavik S.
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Medline [10202149](#)

A-kinase anchoring proteins: protein kinase A and beyond.

Edwards AS, Scott JD.
Curr Opin Cell Biol. 2000; 12(2): 217-221.
Medline [10712918](#)

The PACT domain, a conserved centrosomal targeting motif in the coiled-coil proteins AKAP450 and pericentrin.

Gillingham AK, Munro S.
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Medline [11263498](#)

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Takahashi M, Yamagiwa A, Nishimura T, Mukai H, Ono Y.
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Medline [12221128](#)

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Ciampi R, Knauf JA, Kerler R, Gandhi M, Zhu Z, Nikiforova MN, Rabes HM, Fagin JA, Nikiforov YE.
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Medline [15630448](#)

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Citation

This paper should be referenced as such :

Ciampi R, Nikiforov YE . AKAP9 (A kinase (PRKA) anchor protein (yotiao) 9). Atlas Genet Cytogenet Oncol Haematol. April 2007 .
URL : <http://AtlasGeneticsOncology.org/Genes/AKAP9ID42999ch7q21.html>

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