

Gene Section

Short Communication

CFAP99 (Cilia and Flagella Associated Protein 99)

Sinem Tunçer, Rafiq Gurbanov

Department of Biological Sciences, Middle East Technical University, Ankara, Turkey

Published in Atlas Database: June 2016

Online updated version : <http://AtlasGeneticsOncology.org/Genes/CFAP99ID61767ch4p16.html>

Printable original version : <http://documents.irevues.inist.fr/bitstream/handle/2042/68171/06-2016-CFAP99ID61767ch4p16.pdf>

DOI: 10.4267/2042/68171

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 2.0 France Licence.

© 2016 Atlas of Genetics and Cytogenetics in Oncology and Haematology

Abstract

Review on CFAP99, with data on DNA, on the protein encoded, and where the gene is implicated.

Keywords CFAP99; Childhood Leukemia; Human development

Identity

Other names: LOC402160, LOC441005

HGNC (Hugo): CFAP99

Location 4p16.3

DNA/RNA

Description

Orientation: Plus strand; 44.072 bases; Exon count: 15 (NCBI Homo sapiens Annotation Release 108).

Transcription

Human CFAP99 gene has 6 transcripts (Table 1).

Protein

Expression

RNA-seq data from 32 tissues reveal that CFAP99 is expressed in testis and fallopian tube, and to a lesser degree in lung, adrenal and thyroid glands (Figure 3).

Function

Unknown

Homology

The CFAP99 gene is conserved in chimpanzee, cow, mouse, rat, chicken, zebrafish, and frog (Table 2)



Figure 1 Cytogenetic bands within chromosome 4. The 4p16.3 is indicated by red.

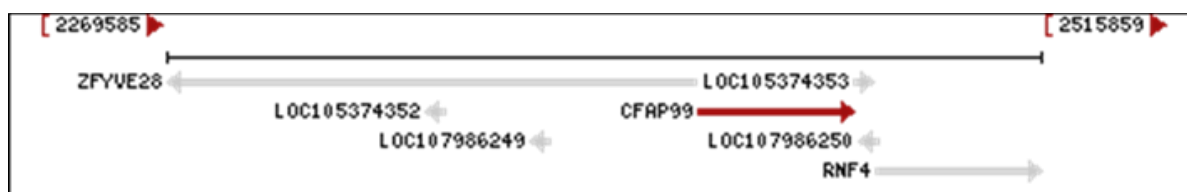


Figure 2 Gene neighbours of CFAP99 on chromosome 4p16.3 (NCBI Homo sapiens Annotation Release 108).

Name	Transcript ID	bp	Protein	Translation ID	Biotype
CFAP99-005	ENST00000635017	2298	714aa	ENSP00000488922	Protein coding
CFAP99-006	ENST00000506607	1398	459aa	ENSP00000425050	Protein coding
CFAP99-001	ENST00000382849	2790	No protein	-	Processed transcript
CFAP99-004	ENST00000511731	927	No protein	-	Processed transcript
CFAP99-003	ENST00000514556	728	No protein	-	Processed transcript
CFAP99-002	ENST00000515732	713	No protein	-	Processed transcript

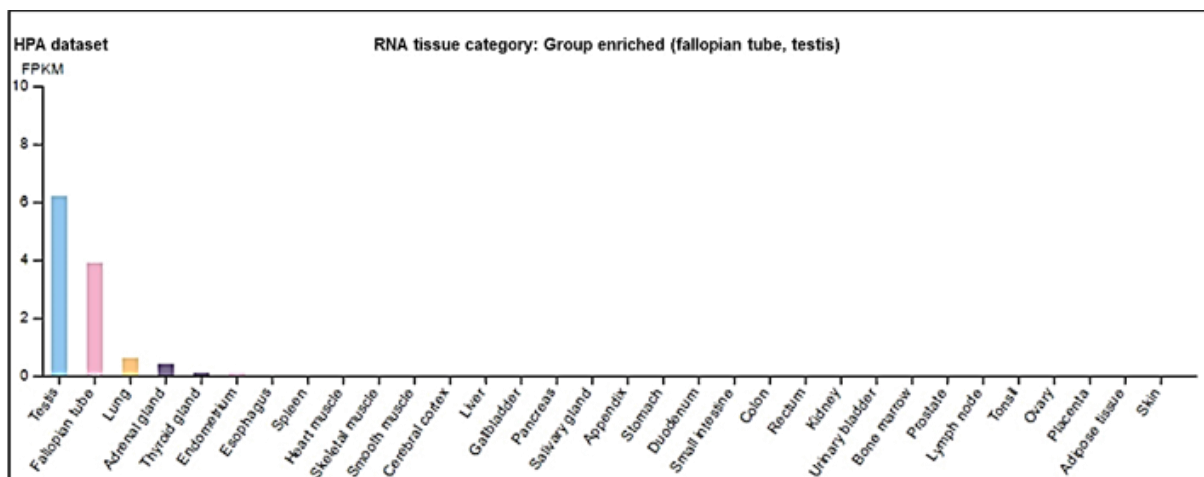
Table 1 Transcripts of human *CFAP99* gene (Ensembl release 84)

Figure 3 CFAP99 tissue expression. RNA-seq data from 32 tissues are reported as mean FPKM (Fragments Per Kilobase gene model and Million reads), corresponding to mean values of the different individual samples from each tissue type.

Species	Gene Symbol	Identity (%) Gene	Identity (%) Protein
<i>H.sapiens</i>	<i>RP11-503N18.1</i>		
vs. <i>P.troglodytes</i>	<i>LOC750504</i>	99.1	98.9
vs. <i>B.taurus</i>	<i>LOC100847979</i>	80.5	72.9
vs. <i>M.musculus</i>	<i>Gm21446</i>	78.7	72.9
vs. <i>R.norvegicus</i>	<i>RGD1564567</i>	78.9	72.3
vs. <i>G.gallus</i>	<i>LOC422887</i>	56.7	52
vs. <i>X.tropicalis</i>	<i>LOC100495334</i>	56.2	50.2
vs. <i>D.rerio</i>	<i>LOC100534701</i>	51.8	41.9

Table 2 Pairwise alignment of CFAP99 gene and protein sequences (in distance from human).

Implicated in

Childhood Leukemia

rs36086854 (minor allele A, major allele G) is a non-synonymous cSNP, a coding Single Nucleotide Polymorphism-cSNP which results in amino acid allelic variants, with an allelic frequency greater than 1 percent in population (Chen et al., 2013). The missense SNP was supposed to be associated with childhood acute lymphoblastic leukemia (ALL) (Singh, 2015).

Human development

CFAP99 was found to be down-regulated (2.15 fold) in the fetuses of obese woman, compared with the fetuses of lean woman (Edlow et al., 2016).

References

Chen LC, Liu MY, Hsiao YC, Choong WK, Wu HY, Hsu WL, Liao PC, Sung TY, Tsai SF, Yu JS, Chen YJ. Decoding the disease-associated proteins encoded in the human chromosome 4. *J Proteome Res.* 2013 Jan 4;12(1):33-44

Edlow AG, Hui L, Wick HC, Fried I, Bianchi DW. Assessing the fetal effects of maternal obesity via transcriptomic analysis of cord blood: a prospective case-control study. *BJOG.* 2016 Jan;123(2):180-9

Singh SK. A Case-Only Genome-wide Association Study of Gender- and Age-specific Risk Markers for Childhood Leukemia FIU Electronic Theses and Dissertations. 2015. Paper 1832; <http://digitalcommons.fiu.edu/cgi/viewcontent.cgi?article=2991&context=etd>

This article should be referenced as such:

Tunçer S, Gurbanov R. CFAP99 (Cilia and Flagella Associated Protein 99). *Atlas Genet Cytogenet Oncol Haematol.* 2017; 21(3):80-82.
