FBrF0079814

IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE

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Date: May 12th, 1995

To: **Rachel**
Flybase

From: **Dr. Robert O.J. Weinzierl**
Imperial College of Science, Technology and Medicine
Department of Biochemistry
London SW7 2AY, England
Tel: [redacted] (direct line)
Fax: [redacted]
e-mail: [redacted]

Re:

Dear Rachel,

Here is a corrected draft of your database entry. The simple take-home message is that there are eight known TAFs (I listed them on the last page) and the molecular weight assignments vary a bit from lab to lab. The only other thing is that TAF250 is almost certainly not a HMG-box containing protein. The *Drosophila* version has an insertion of 35 amino acids right in the middle of that putative region (compared to human TAF250 [CCG1]) which essentially abolishes the rather weak homology completely.
I hope that helped to sort things out.

Best wishes,

Robert

rd120,11:02 26/4/95 +0100,Tafs 1

From: rd120 <rd120@gen.cam.ac.uk>
Date: Wed, 26 Apr 95 11:02:56 BST
To: [redacted]
Subject: Tafs
Cc: [redacted]

TO RACHEL [redacted]

Hi Robert,

I am wondering whether you can help FlyBase out concerning the Taf genes. As you well know there is more than one group working on these genes, and the genes are named according to the molecular weight of their product. Different groups have different molecular weight standards, and do not always refer to each other's work. When the two groups have assigned different molecular weights to the same product this leads to two gene names for what is actually one gene. Consequently we have 14 Taf genes, which I am sure are too many! As some of the molecular weights are quite close to each other, it is not always trivial for FlyBase to guess which are which. Below is a list of all of them: # marks separate gene entries. For example, I bet Taf28, Taf30&agr;, Taf30beta; and Taf32 are not actually four distinct genes, and Taf40 and Taf42, and Taf60 and Taf62 are suspiciously close to each other too. I realise that we are not up to date on all the Taf papers, but what help you can give us will make life less confusing.

(your phone call happened here)

The recent paper I just mentioned (Kokubo et al., Nature 367:484-487) tells us that 'p28' and 'p22' (as they call them) are products of the same gene with p22 being N-truncated version of p28, if that helps you out at all.

Many thanks for your help,

Rachel

#
GENE SYMBOL: Taf110 TBP-associated factor
GENE NAME: ~~Transcription-activating factor~~ 110
*z FBgn0010280
*H Last updated 14 Nov 94
*y FBgn0010419
GENETIC LOCATION: 3-[43]
CYTOLOGICAL LOCATION: 72D4--72D5
REFERENCE: FBrf0059135 == Weinzierl et al., 1993, Nature 362(6420): 511--517
REFERENCE: FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
REFERENCE: FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
REFERENCE: FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*d ~~transcription-activating factor~~ 110kD-subunit
*d TFIID-subunit
*g L06861
*g S63550
*m PIR/A45183
*m PIR/A48184
*E FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*N 72D4,D5
*T 4.6
*S 921 aa
*j Sp1 [human] 35% aa similarity in amino terminal one-third
SYNONYM: TAF110

CYTOLOGICAL LOCATION: 72D4–72D5 (determined by in situ hybridisation)
*p Purified TfIID, containing endogenous TBP and at least ~~seven~~ Tafs is eight
*p necessary and sufficient for Sp1 activation in a reconstituted transcription
*p reaction. The Taf110 gene has been cloned. Cell culture studies suggest
*p that Taf110 can functionally interact with Sp1 and serve as a coactivator
*p of transcription.
*E FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
SYNONYM: TAFII110: TBP associated factor 110
*p TFIID complex subunit.
*E FBrf0059135 == Weinzierl et al., 1993, Nature 362(6420): 511--517
SYNONYM: TAFII110: TATA-associated factor 110
*p TfIID transcription factor is a multiprotein complex including TATA-binding
*p protein (Tbp) and Tbp-associated factors (TAFs). Taf250 has been partially
*p cloned and the assembly of a partial complex containing recombinant
*p Tbp, Taf250 and Taf110 was reported. This triple complex supports
*p activation of HeLa cell Sp1 and reveals specific interactions between
*p Tbp, Taf250 and Taf110.
*E FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
SYNONYM: TAFII110: TBP-associated factor 110
*p Purified TAF80 is unable to bind TBP directly or to interact strongly
*p with the C-terminal domain of TAF250, but can only interact with a
*p complex containing TBP, TAF250, TAF110 and TAF60.
*E FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900
SYNONYM: p110
*p Taf110 gene cloned using an oligonucleotide probe and sequenced. In
*p vitro expressed TAF110 interacts directly with the TAF250 which itself
*p interacts with TBP, a complex of all three is suggested. Binding study
*p with various mutants of Taf250 suggests that both TAF110 and TBP interact
*p with the N-terminal 352-amino acid portion of TAF250.
#

GENE SYMBOL: Taf150
GENE NAME: Transcription-activating factor 150
*z FBgn0011836
*H Last updated 14 Nov 94
GENETIC LOCATION: 3-
CYTOLOGICAL LOCATION: 67D5-67D6
SYNONYM: dTAF150
REFERENCE: FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
REFERENCE: FBrf0074707 == Verrijzer et al., 1994, Science 264(5161): 933--941
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*d transcription-activating-factor-150kD-subunit
*j TSM1 [S. cerevisiae]
*g X79243
*m PIR/A54063
*E FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
SYNONYM: TAFII150
GENE NAME: TBP associated factor 150
*p TFIID complex subunit.
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
SYNONYM: TAF150
*p Purified TfIID, containing endogenous TBP and at least seven Tafs is eight
*p necessary and sufficient for Sp1 activation in a reconstituted transcription
*p reaction.
#

TAF200 = TAF250 ? same
- TAF230 ? Ring !

GENE SYMBOL: Taf200
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*d transcription-activating-factor-200kD-subunit
*d TFIID-subunit
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
SYNONYM: TAF200
GENE NAME: TBP-associated-factor-200

*p Purified TfIID, containing endogenous TBP and at least seven Tafs is
*p necessary and sufficient for Sp1 activation in a reconstituted transcription
*p reaction.
#
GENE SYMBOL: Taf22
GENE NAME: Transcription-activating factor 22
*z FBgn0011304
*H Last updated 14 Nov 94
REFERENCE: FBrf0066965 == Nakatani, 1994, Nature 367: 484--487
*d transcription-activating-factor-22kD-subunit
*d TFIID-subunit
*g U06450
#
GENE SYMBOL: Taf250
GENE NAME: Transcription-activating factor 250
*z FBgn0010355
*H Last updated 14 Nov 94
*y FBgn0010420
GENETIC LOCATION: 3-[47.1]
CYTOLOGICAL LOCATION: 82A2--82A3
SYNONYM: Taf230
REFERENCE: FBrf0059135 == Weinzierl et al., 1993, Nature 362(6420): 511--517
REFERENCE: FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
REFERENCE: FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900
REFERENCE: FBrf0048091 == Howard et al., 1988, Genes Dev. 2: 1037--1046
REFERENCE: FBrf0051807 == Little, 1990, Gene 88(1): 113--116
*d transcription-activating-factor-250kD-subunit
*d TFIID-subunit
*d bromodomain-protein
*d HMG-domain-protein ← disputed: probably not real HMG box!
*j CCG1 [human]
*g S61883
*m PIR/S32373
*m PIR/A47371
REFERENCE: FBrf0059135 == Weinzierl et al., 1993, Nature 362(6420): 511--517
*Z 6.5
*T 4.5
*S 1490 aa
*j TAFII/CCG1 [human] 60% aa identity over 1000 aa
*u See also Dynlacht, Cell 66:563.
SYNONYM: TAFII250: TATA-associated factor 250
*p TfIID transcription factor is a multiprotein complex including TATA-binding
*p protein (Tbp) and Tbp-associated factors (TAFs). Taf250 has been partially
*p cloned and the assembly of a partial complex containing recombinant
*p Tbp, Taf250 and Taf110 was reported. This triple complex supports
*p activation of HeLa cell Sp1 and reveals specific interactions between
*p Tbp, Taf250 and Taf110.
REFERENCE: FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
SYNONYM: TAFII250: TBP-associated factor 250
*p Purified TAFII80 is unable to bind TBP directly or to interact strongly
*p with the C-terminal domain of TAFII250, but can only interact with
*p a complex containing TBP, TAFII250, TAFII110 and TAFII60.
REFERENCE: FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900
SYNONYM: p230
*p In vitro expressed TAF110 interacts directly with the TAF250 which
*p itself interacts with TBP, a complex of all three is suggested. Binding
*p study with various mutants of Taf250 suggests that both TAF110 and
*p TBP interact with the N-terminal 352-amino acid portion of TAF250.
*A Taf250[1335]
REFERENCE: FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900
REFERENCE: FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900

*s TAF250 protein C-terminal-truncated at residue 1335 by the addition
*s of 6 histidine residues and a stop codon.
*k In in vitro experiments protein from this deletion derivative coprecipitates
*k with TAF110.
*o in vitro mutagenesis
*A Taf250[352]
REFERENCE: FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900
REFERENCE: FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900
*s Taf250 protein C-terminal-truncated at residue 352 by the addition
*s of 6 histidine residues and a stop codon.
*k In in vitro experiments protein from this deletion derivative coprecipitates
*k with Taf110, though less effectively than for Taf250[1335] or Taf250[665]
*k protein.
*o in vitro mutagenesis
*A Taf250[665]
REFERENCE: FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900
REFERENCE: FBrf0059277 == Kokubo et al., 1993, Proc. natn. Acad. Sci. USA. 90(13): 5896--5900
*s Taf250 protein C-terminal-truncated at residue 665 by the addition
*s of 6 histidine residues and a stop codon.
*k In in vitro experiments protein from this deletion derivative coprecipitates
*k with TAF110, though less effectively than for Taf250[1335] protein.
*o in vitro mutagenesis
#

GENE SYMBOL: Taf28
GENE NAME: Transcription-activating factor 28
*z FBgn0011303
*H Last updated 14 Nov 94
REFERENCE: FBrf0066965 == Nakatani, 1994, Nature 367: 484--487
*d transcription-activating-factor-28kD-subunit
*d TFIID-subunit
*g S69018
*g U06456
*g U06457
#

GENE SYMBOL: Taf30&agr;
GENE NAME: Transcription-activating factor 30kD subunit &agr;
*z FBgn0011290
*H Last updated 14 Nov 94
GENETIC LOCATION: 3-[51]
CYTOLOGICAL LOCATION: 86F1--86F2
REFERENCE: FBrf0065619 == Yokomori et al., 1993, Genes Dev. 7(12B): 2587--2597
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*d transcription-activating-factor-30kD-subunit-&agr;
*d TFIID-subunit
*g S67741
*m PIR/A49453
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*p Purified TfIID, containing endogenous TBP and at least seven Tafs is
*p necessary and sufficient for Sp1 activation in a reconstituted transcription
*p reaction.
#

GENE SYMBOL: Taf30&bgr;
GENE NAME: Transcription-activating factor 30kD subunit &bgr;
*z FBgn0011291
*H Last updated 14 Nov 94
REFERENCE: FBrf0065619 == Yokomori et al., 1993, Genes Dev. 7(12B): 2587--2597
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*d transcription-activating-factor-30kD-subunit-&bgr;
*d TFIID-subunit
*g S67660
*m PIR/B49453

REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*p Purified TfIID, containing endogenous TBP and at least seven Tafs is
*p necessary and sufficient for Sp1 activation in a reconstituted transcription
*p reaction.
#
GENE SYMBOL: Taf32
REFERENCE: FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
*d transcription-activating-factor-32kD-subunit
*d TFIID-subunit
REFERENCE: FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
SYNONYM: TAFII32
GENE NAME: TBP associated factor 32
*p TFIID complex subunit.
#
GENE SYMBOL: Taf40
REFERENCE: FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
REFERENCE: FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
REFERENCE: FBrf0064477 == Goodrich et al., 1993, Cell 75(3): 519--530
*d transcription-activating-factor-40kD-subunit
*d TFIID-subunit
*E FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
SYNONYM: TAFII40
GENE NAME: TBP associated factor 40
*p TFIID complex subunit.
*E FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
*u See also Dynlacht, Cell 66:563
SYNONYM: TAFII40
GENE NAME: TBP-associated factor 40
*p TfIID complex subunit.
*E FBrf0064477 == Goodrich et al., 1993, Cell 75(3): 519--530
SYNONYM: dTAF<down>II</down>40
GENE NAME: TBP-associated factor 40
CYTOLOGICAL LOCATION: 16D4--16D5 (determined by in situ hybridisation)
*p Taf40 gene cloned and its biochemically characterized with respect
*p to its interaction with VP16, a viral transcriptional activator.
#
GENE SYMBOL: Taf42
GENE NAME: Transcription-activating factor 42
*z FBgn0011302
*H Last updated 14 Nov 94
GENETIC LOCATION: 1-[58]
CYTOLOGICAL LOCATION: 16D4--16D5
REFERENCE: FBrf0071734 == EDGP Project Members, 1994-, European Drosophila Genome Mapping Project
REFERENCE: FBrf0064477 == Goodrich et al., 1993, Cell 75(3): 519--530
REFERENCE: FBrf0066965 == Nakatani, 1994, Nature 367: 484--487
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*d transcription-activating-factor-42kD-subunit
*d TFIID-subunit
*g dbSTS/4249
*g U06458
*g L29540
*g Z32473
*E FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*p Purified TfIID, containing endogenous TBP and at least seven Tafs is
*p necessary and sufficient for Sp1 activation in a reconstituted transcription
*p reaction.
#
GENE SYMBOL: Taf60
GENE NAME: Transcription-activating factor II60
*z FBgn0010417

? = TAF30

TAF 40 = TAF 42

*H Last updated 01 Jul 94
GENETIC LOCATION: 3-[45]
CYTOLOGICAL LOCATION: 76B9--76B10
REFERENCE: FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
REFERENCE: FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
REFERENCE: FBrf0065607 == Weinzierl et al., 1993, EMBO J. 12(13): 5303--5309
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*d transcription-activating-factor-60kD-subunit
*d TFIID-subunit
*g L25443
*E FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
SYNONYM: TAFII60: TBP associated factor 60
*p TFIID complex subunit.
*E FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*p Purified TfIID, containing endogenous TBP and at least seven Tafs is
*p necessary and sufficient for Sp1 activation in a reconstituted transcription
*p reaction.
*E FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
*u See also Dynlacht, Cell 66:563
SYNONYM: TAFII60: TBP-associated factor 60
*p TfIID complex subunit.
#
GENE SYMBOL: Taf62
GENE NAME: Transcription-activating factor 62
*z FBgn0011301
*H Last updated 14 Nov 94
REFERENCE: FBrf0066965 == Nakatani, 1994, Nature 367: 484--487
*d transcription-activating-factor-62kD-subunit
*d TFIID-subunit
*g U06459
#
GENE SYMBOL: Taf80
GENE NAME: Transcription-activating factor 80
*z FBgn0010356
*H Last updated 14 Nov 94
GENETIC LOCATION: 2-[60]
CYTOLOGICAL LOCATION: 47C5-47C6
SYNONYM: Taf85
REFERENCE: FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
REFERENCE: FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
REFERENCE: FBrf0064553 == Kokubo et al., 1993, Molec. Cell. Biol. 13(12): 7859--7863
REFERENCE: FBrf0066965 == Nakatani, 1994, Nature 367: 484--487
REFERENCE: FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*d transcription-activating-factor-80kD-subunit
*d TFIID-subunit
*g U06460
*m PIR/S33263
*E FBrf0059142 == Dynlacht et al., 1993, Nature 363(6425): 176--179
*T 2.4
*S 704 aa
*d WD40-repeat-protein
*d G-protein-&bgr;-subunit-like \?
*j Cop1 [Arabidopsis thaliana]
SYNONYM: TAFII80: TBP-associated factor 80
CYTOLOGICAL LOCATION: 47C5--47C6 (determined by in situ hybridisation)
*p A TfIID-complex subunit. Taf80 gene has been cloned, expressed in
*p a baculovirus expression system and the protein partially characterized:
*p DNA sequence analysis reveals several &bgr;-transducin repeats and similarity
*p to COP1 putative transcription factor of Arabidopsis. Purified TAF80
*p is unable to bind TBP directly or to interact strongly with the C-terminal
*p domain of TAF250, but can only interact with a complex containing TBP,

TAF 60 - TAF 62

rd120,11:02 26/4/95 +0100,Tafs 7

*p TAF250, TAF110 and TAF60.
*E FBrf0053382 == Dynlacht et al., 1991, Cell 66: 563--576
SYNONYM: TAFII80: TBP associated factor 80
*p TFIID complex subunit.
*E FBrf0057884 == Hoey et al., 1993, Cell 72(2): 247--260
*p Purified TfIID, containing endogenous TBP and at least seven Tafs is
*p necessary and sufficient for Sp1 activation in a reconstituted transcription
*p reaction.
#

TFIID =

- TAF 250
- TAF 150
- TAF 110
- TAF 80 & TBP
- TAF 60
- TAF 40
- TAF 30 α
- TAF 30 β