








• 37102 65736 (0; LocusLink)  
click to see LocusLink entry 


• 73061 106999 (0; AminoAcid)  
click to see protein entry 

• 110618 118472 (2; JAX)

click to see Jackson Laboratory entry 

• 110618 118472 (0; LocusLink)  
click to see LocusLink entry 

• 110618 118472 (1; AminoAcid)  
click to see protein entry 

• 126709 203566 (1; AminoAcid)  
click to see protein entry 

- 126709 203566 (2; PubMed)

Identification of a putative transcription factor gene (WBSCR11) that is commonly deleted in Williams-Beuren syndrome. Osborne LR, Campbell T, Daradich A, Scherer SW, Tsui LC. *Genomics*. 1999 Apr 15;57(2):279-84. [click to see abstract](#)

A transcription factor involved in skeletal muscle gene expression is deleted in patients with Williams syndrome. Tassabehji M, Carette M, Wilmot C, Donnai D, Read AP, Metcalfe K. *Eur J Hum Genet*. 1999 Oct-Nov;7(7):737-47. [click to see abstract](#)

A duplicated gene in the breakpoint regions of the 7q11.23 Williams-Beuren syndrome deletion encodes the initiator binding protein TFII-I and BAP-135, a phosphorylation target of BTK. Perez Jurado LA, Wang YK, Peoples R, Coloma A, Cruces J, Francke U. *Hum Mol Genet*. 1998 Mar;7(3):325-34. [click to see abstract](#)


Identification of GTF2IRD1, a putative transcription factor within the Williams-Beuren syndrome deletion at 7q11.23. Franke Y, Peoples RJ, Francke U. *Cytogenet Cell Genet*. 1999;86(3-4):296-304. [click to see abstract](#)

A mouse single-copy gene, *Gtf2i*, the homolog of human GTF2I, that is duplicated in the Williams-Beuren syndrome deletion region. Wang YK, Perez-Jurado LA, Francke U. *Genomics*. 1998 Mar 1;48(2):163-70. [click to see abstract](#)


Alternatively spliced isoforms of TFII-I. Complex formation, nuclear translocation, and differential gene regulation. Cheriya V, Roy AL. *J Biol Chem*. 2000 Aug 25;275(34):26300-8. [click to see abstract](#)

Characterization and gene structure of a novel retinoblastoma-protein-associated protein similar to the transcription regulator TFII-I. Yan X, Zhao X, Qian M, Guo N, Gong X, Zhu X. *Biochem J*. 2000 Feb 1;345 Pt 3:749-57. [click to see abstract](#)


Regulation of TFII-I activity by phosphorylation. Novina CD, Cheriya V, Roy AL. *J Biol Chem*. 1998 Dec 11;273(50):33443-8. [click to see abstract](#)


- 126709 203566 (0; LocusLink)  
click to see LocusLink entry 



- 246534 345425 (1; LocusLink)  
click to see LocusLink entry 

- 246534 345425 (0; PubMed)


Isolation and characterization of BEN, a member of the TFII-I family of DNA-binding proteins containing distinct helix-loop-helix domains. Bayarsaihan D, Ruddle FH. Proc Natl Acad Sci U S A 2000 Jun 20;97(13):7342-7 [click to see abstract](#) 


- 246534 345425 (2; AminoAcid)  
click to see protein entry 


- 380736 424019 (1; JAX)

click to see Jackson Laboratory link 

- 380736 424019 (2; PubMed)

The murine CYLN2 gene: genomic organization, chromosome localization, and comparison to the human gene that is located within the 7q11.23 Williams syndrome critical region. Hoogenraad CC, Eussen BH, Langeveld A, van Haperen R, Winterberg S, Wouters CH, Grosveld F, De Zeeuw CI, Galjart N. Genomics. 1998 Nov 1;53(3):348-58. [click to see abstract](#) 

- 380736 424019 (3; AminoAcid)  
click to see protein link 


- 380736 424019 (0; LocusLink)  
click to see LocusLink entry 


- 471941 487499 (2; JAX)


click to see Jackson Laboratory link 





- 471941 487499 (3; PubMed)

The gene for replication factor C subunit 2 (RFC2) is within the 7q11.23 Williams syndrome deletion. Peoples R, Perez-Jurado L, Wang YK, Kaplan P, Francke U. *Am J Hum Genet.* 1996 Jun;58(6):1370-3. no abstract available 


Assignment of the 36.5-kDa (RFC5), 37-kDa (RFC4), 38-kDa (RFC3), and 40-kDa (RFC2) subunit genes of human replication factor C to chromosome bands 12q24.2-q24.3, 3q27, 13q12.3-q13, and 7q11.23. Okumura K, Nogami M, Taguchi H, Dean FB, Chen M, Pan ZQ, Hurwitz J, Shiratori A, Murakami Y, Ozawa K, et al. *Genomics.* 1995 Jan 1;25(1):274-8. click to see abstract 


- 471941 487499 (0; AminoAcid)  
click to see protein link 


- 471941 487499 (1; LocusLink)  
click to see LocusLink entry 

- 489194 504182 (2; AminoAcid)  
click to see protein entry 

- 489194 504182 (1; PubMed)


Divergent human and mouse orthologs of a novel gene (WB-SCR15/Wbscr15) reside within the genomic interval commonly deleted in Williams syndrome. Doyle JL, DeSilva U, Miller W, Green ED. *Cytogenet Cell Genet.* 2000;90(3-4):285-90. [click to see abstract](#) 

Comparative genomic sequence analysis of the Williams syndrome region (LIMK1-RFC2) of human chromosome 7q11.23. Martindale DW, Wilson MD, Wang D, Burke RD, Chen X, Duronio V, Koop BF. *Mamm Genome.* 2000 Oct;11(10):890-8. [click to see abstract](#) 

- 489194 504182 (0; LocusLink)  
click to see LocusLink entry 


- 509052 528504 (2; JAX)


click to see Jackson Laboratory entry 


- 509052 528504 (0; LocusLink)  
click to see LocusLink entry 



- 509052 528504 (1; PubMed)

Comparative genomic sequence analysis of the Williams syndrome region (LIMK1-RFC2) of human chromosome 7q11.23. Martindale DW, Wilson MD, Wang D, Burke RD, Chen X, Duronio V, Koop BF. *Mamm Genome*. 2000 Oct;11(10):890-8. [click to see abstract](#) 

- 545221 577766 (1; LocusLink)  
click to see LocusLink entry 

- 545221 577766 (2; AminoAcid)  
click to see protein entry 

• 545221 577766 (3; PubMed)

Regulation of actin dynamics through phosphorylation of cofilin by LIM-kinase. Arber S, Barbayannis FA, Hanser H, Schneider C, Stanyon CA, Bernard O, Caroni P. *Nature*. 1998 Jun 25;393(6687):805-9. [click to see abstract](#)

Specificity of single LIM motifs in targeting and LIM/LIM interactions in situ. Arber S, Caroni P. *Genes Dev*. 1996 Feb 1;10(3):289-300. [click to see abstract](#)

Regulation of actin dynamics: The LIM kinase connection. Lawler S. *Curr Biol*. 1999 Nov 4;9(21):R800-2. [click to see abstract](#)

The N-terminal LIM domain negatively regulates the kinase activity of LIM-kinase 1. Nagata K, Ohashi K, Yang N, Mizuno K. *Biochem J*. 1999 Oct 1;343 Pt 1:99-105. [click to see abstract](#)

LIM-kinase1. Stanyon CA, Bernard O. *Int J Biochem Cell Biol*. 1999 Mar-Apr;31(3-4):389-94. Review. [click to see abstract](#)

Activation of LIM-kinase by Pak1 couples Rac/Cdc42 GTPase signalling to actin cytoskeletal dynamics. Edwards DC, Sanders LC, Bokoch GM, Gill GN. *Nat Cell Biol*. 1999 Sep;1(5):253-9. [click to see abstract](#)

LIM kinase 1 accumulates in presynaptic terminals during synapse maturation. Wang JY, Wigston DJ, Rees HD, Levey AI, Falls DL. *J Comp Neurol*. 2000 Jan 17;416(3):319-34. [click to see abstract](#)


LIM-kinase1 hemizyosity implicated in impaired visuospatial constructive cognition. Frangiskakis JM, Ewart AK, Morris CA, Mervis CB, Bertrand J, Robinson BF, Klein BP, Ensing GJ, Everett LA, Green ED, Proschel C, Gutowski NJ, Noble M, Atkinson DL, Odelberg SJ, Keating MT. *Cell*. 1996 Jul 12;86(1):59-69. [click to see abstract](#)

LIM-kinase deleted in Williams syndrome. Tassabehji M, Metcalfe K, Fergusson WD, Carette MJ, Dore JK, Donnai D, Read AP, Proschel C, Gutowski NJ, Mao X, Sheer D. *Nat Genet*. 1996 Jul;13(3):272-3. [No abstract available.](#)

Assignment of the human and mouse LIM-kinase genes (LIMK1; Limk1) to chromosome bands 7q11.23 and 5G1, respectively, by in situ hybridization. Mao X, Jones TA, Williamson J, Gutowski NJ, Proschel C, Noble M, Sheer D. *Cytogenet Cell Genet*. 1996;74(3):190-1. [No abstract available.](#)

- 545221 577766 (0; JAX)


click to see Jackson Laboratory entry 


- 592885 636413 (0; LocusLink)  
click to see LocusLink entry 


- 592885 636413 (3; JAX)


click to see Jackson Laboratory entry 


• 592885 636413 (2; PubMed)


Deletions of the elastin gene at 7q11.23 occur in approximately 90% of patients with Williams syndrome. Nickerson E, Greenberg F, Keating MT, McCaskill C, Shaffer LG. *Am J Hum Genet.* 1995 May;56(5):1156-61. [click to see abstract](#) 


Elastin is an essential determinant of arterial morphogenesis. Li DY, Brooke B, Davis EC, Mecham RP, Sorensen LK, Boak BB, Eichwald E, Keating MT. *Nature.* 1998 May 21;393(6682):276-80. [click to see abstract](#) 


Supravalvular aortic stenosis associated with a deletion disrupting the elastin gene. Ewart AK, Jin W, Atkinson D, Morris CA, Keating MT. *J Clin Invest.* 1994 Mar;93(3):1071-7. [click to see abstract](#) 


Human elastin gene: new evidence for localization to the long arm of chromosome 7. Fazio MJ, Mattei MG, Passage E, Chu ML, Black D, Solomon E, Davidson JM, Uitto J. *Am J Hum Genet.* 1991 Apr;48(4):696-703. [click to see abstract](#) 


Hemizygoty at the elastin locus in a developmental disorder, Williams syndrome. Ewart AK, Morris CA, Atkinson D, Jin W, Sternes K, Spallone P, Stock AD, Leppert M, Keating MT. *Nat Genet.* 1993 Sep;5(1):11-6. [click to see abstract](#) 

Novel arterial pathology in mice and humans hemizygous for elastin. Li DY, Faury G, Taylor DG, Davis EC, Boyle WA, Mecham RP, Stenzel P, Boak B, Keating MT. *J Clin Invest.* 1998 Nov 15;102(10):1783-7. [click to see abstract](#) 

Regulation of elastin gene expression. Rosenbloom J, Bashir M, Yeh H, Rosenbloom J, Ornstein-Goldstein N, Fazio M, Kahari VM, Uitto J. *Ann N Y Acad Sci.* 1991;624:116-36. [click to see abstract](#) 

Deletion analyses of 5'-flanking region of the human elastin gene. Delineation of functional promoter and regulatory cis-elements. Kahari VM, Fazio MJ, Chen YQ, Bashir MM, Rosenbloom J, Uitto J. *J Biol Chem.* 1990 Jun 5;265(16):9485-90. [click to see abstract](#) 


Characterization of the complete human elastin gene. Delineation of unusual features in the 5'-flanking region. Bashir MM, Indik Z, Yeh H, Ornstein-Goldstein N, Rosenbloom JC, Abrams W, Fazio M, Uitto J, Rosenbloom J. *J Biol Chem.* 1989 May 25;264(15):8887-91. [click to see abstract](#) 


Regulation of elastin gene expression: evidence for functional promoter activity in the 5'-flanking region of the human gene. Fazio MJ, Kahari VM, Bashir MM, Saitta B, Rosenbloom J, Uitto J. *J Invest Dermatol.* 1990 Feb;94(2):191-6. [click to see abstract](#) 


Cloning of full-length elastin cDNAs from a human skin fibroblast recombinant cDNA library: further elucidation of alternative splicing utilizing exon-specific oligonucleotides. Fazio MJ, Olsen DR, Kauh EA, Baldwin CT, Indik Z, Ornstein-Goldstein N, Yeh H.




Rosenbloom J, Uitto J. *J Invest Dermatol*. 1988 Nov;91(5):458-64. [click to see abstract](#) 


Isolation and characterization of human elastin cDNAs, and age-associated variation in elastin gene expression in cultured skin fibroblasts. Fazio MJ, Olsen DR, Kuivaniemi H, Chu ML, Davidson JM, Rosenbloom J, Uitto J. *Lab Invest*. 1988 Mar;58(3):270-7. [click to see abstract](#) 


- 592885 636413 (1; AminoAcid)  
click to see protein entry 


- 834305 836093 (0; AminoAcid)  
click to see protein entry 

- 834305 836093 (1; PubMed)


Claudin multigene family encoding four-transmembrane domain protein components of tight junction strands. Morita K, Furuse M, Fujimoto K, Tsukita S. Proc Natl Acad Sci U S A. 1999 Jan 19;96(2):511-6. [click to see abstract](#) 

Clostridium perfringens enterotoxin utilizes two structurally related membrane proteins as functional receptors in vivo. Katahira J, Sugiyama H, Inoue N, Horiguchi Y, Matsuda M, Sugimoto N. J Biol Chem. 1997 Oct 17;272(42):26652-8. [click to see abstract](#) 


- 834305 836093 (2; LocusLink)  
click to see LocusLink entry 

- 875566 876651 (3; LocusLink)  
click to see LocusLink entry 


- 875566 876651 (6; JAX)

click to see The Jackson Laboratory entry 

- 875566 876651 (5; PubMed)


Genes for the CPE receptor (CPETR1) and the human homolog of RVP1 (CPETR2) are localized within the Williams-Beuren syndrome deletion. Paperna et al. Genomics 1998 Dec 15;54(3):453-9. [click to see abstract](#) 


[click to see full text article](#) 


Claudin multigene family encoding four-transmembrane domain protein components of tight junction strands. Morita et al. Proc Natl Acad Sci U S A 1999 Jan 19;96(2):511-6. [click to see abstract](#) 

[click to see full text article](#) 



- 875566 876651 (4; AminoAcid)  
click to see protein entry 

- 876611 890141 (2; LocusLink)  
click to see LocusLink entry 

- 876611 890141 (0; AminoAcid)  
click to see protein entry 


- 876611 890141 (1; PubMed)

Functional annotation of a full-length mouse cDNA collection.


Kawai et al., Nature. 2001 Feb 8;409(6821):685-90. 


- 898890 901353 (3; JAX)

click to see The Jackson Laboratory entry 

- 898890 901353 (2; NCBI)  
click to see Entrez entry 


- 898890 901353 (1; PubMed)

Functional annotation of a full-length mouse cDNA collection.  
Kawai et al., Nature. 2001 Feb 8;409(6821):685-90. [click to see abstract](#) 


- 898890 901353 (0; LocusLink)  
click to see LocusLink entry 





- 901301 902316 (4; JAX)


click to see The Jackson Laboratory entry 

- 901301 902316 (5; PubMed)


Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes. Carninci P, Shibata Y, Hayatsu N, Sugahara Y, Shibata K, Itoh M, Konno H, Okazaki Y, Muramatsu M, Hayashizaki Y. *Genome Res.* 2000 Oct;10(10):1617-30. [click to see abstract](#) 


- 901301 902316 (6; LocusLink)  
click to see LocusLink entry 

- 901301 902316 (7; NCBI)  
click to see Entrez entry 



- 912750 940277 (1; LocusLink)  
click to see LocusLink entry 



- 912750 940277 (0; JAX)


click to see The Jackson Laboratory entry 


- 912750 940277 (2; AminoAcid)  
click to see protein entry 

- 912750 940277 (3; PubMed)

Expression analysis and protein localization of the human HPC-1/syntaxin 1A, a gene deleted in Williams syndrome. Botta et al. Genomics 1999 Dec 15;62(3):525-8. [click to see abstract](#)   
[click to see full text article](#) 


Detection of an atypical 7q11.23 deletion in Williams syndrome patients which does not include the STX1A and FZD3 genes. Botta et al. Med Genet 1999 Jun;36(6):478-80. [click to see abstract](#)   
[click to see full text article](#) 


Hemizygous deletion of the HPC-1/syntaxin 1A gene (STX1A) in patients with Williams syndrome. Nakayama et al. Cytogenet Cell Genet 1998;82(1-2):49-51. [click to see abstract](#) 


Hemizygous deletion of the syntaxin 1A gene in individuals with Williams syndrome. Osborne et al. Am J Hum Genet 1997 Aug;61(2):449-52. [click to see abstract](#) 





- 942137 953269 (0; PubMed)


RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Shibata et al., *Genome Res.* 2000 Nov;10(11):1757-71. [click to see abstract](#) 


Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes. Carninci P, Shibata Y, Hayatsu N, Sugahara Y, Shibata K, Itoh M, Konno H, Okazaki Y, Muramatsu M, Hayashizaki Y. *Genome Res.* 2000 Oct;10(10):1617-30. [click to see abstract](#) 

- 942137 953269 (1; AminoAcid)  
click to see protein entry 


- 942137 953269 (2; LocusLink)  
click to see LocusLink entry 

- 953404 954543 (0; LocusLink)  
click to see LocusLink entry 


- 962977 967327 (0; NCBI)  
click to see EST entry 


- 996079 1027062 (2; LocusLink)  
click to see LocusLink entry 

- 996079 1027062 (0; PubMed)

Complete physical map of the common deletion region in Williams syndrome and identification and characterization of three novel genes. Meng et al. Hum Genet 1998 Nov;103(5):590-9. [click to see abstract](#) 

[click to see full text article](#) 


WBSCR14, a putative transcription factor gene deleted in Williams-Beuren syndrome: complete characterisation of the human gene and the mouse ortholog. de Luis et al. Eur J Hum Genet 2000 Mar;8(3):215-22. [click to see abstract](#) 

- 996079 1027062 (1; AminoAcid)  
click to see protein entry 




- 996079 1027062 (3; JAX)


click to see The Jackson Laboratory entry 


- 1038900 1049313 (3; LocusLink)  
click to see LocusLink entry 

- 1038900 1049313 (0; PubMed)

Complete physical map of the common deletion region in Williams syndrome and identification and characterization of three novel genes. Meng et al. Hum Genet 1998 Nov;103(5):590-9. [click to see abstract](#) 

[click to see full text article](#) 

TBL2, a novel transducin family member in the WBS deletion: characterization of the complete sequence, genomic structure, transcriptional variants and the mouse ortholog. Perez Jurado et al. Cytogenet Cell Genet 1999;86(3-4):277-84. [click to see abstract](#) 


- 1038900 1049313 (1; AminoAcid)  
click to see protein entry 


- 1038900 1049313 (2; JAX)

click to see The Jackson Laboratory entry 

- 1057668 1071021 (0; JAX)


click to see The Jackson Laboratory entry 

- 1057668 1071021 (1; AminoAcid)  
click to see protein entry 


- 1057668 1071021 (2; LocusLink)  
click to see LocusLink entry 




- 1057668 1071021 (3; PubMed)



Complete physical map of the common deletion region in Williams syndrome and identification and characterization of three novel genes. Meng et al. Hum Genet 1998 Nov;103(5):590-9. click to see abstract 


click to see full text article 


The BCL7 gene family: deletion of BCL7B in Williams syndrome. Jadayel et al. Gene 1998 Dec 11;224(1-2):35-44. click to see abstract 

- 1076535 1133789 (0; PubMed)

Identification of the WBSCR9 gene, encoding a novel transcriptional regulator, in the Williams-Beuren syndrome deletion at 7q11.23. Peoples et al. Cytogenet Cell Genet 1998;82(3-4):238-46. click to see the abstract 

A novel human gene, WSTF, is deleted in Williams syndrome. Lu et al. Genomics 1998 Dec 1;54(2):241-9. click to see the abstract   
click to see full text article 

- 1076535 1133789 (1; AminoAcid)  
click to see protein entry 


- 1076535 1133789 (3; LocusLink)  
click to see LocusLink entry 

- 1076535 1133789 (2; JAX)



click to see The Jackson Laboratory entry 



- 1138476 1140251 (0; JAX)

click to see The Jackson Laboratory entry 


- 1138476 1140251 (1; AminoAcid)  
click to see protein entry 

- 1138476 1140251 (2; PubMed)

Characterization and expression pattern of the frizzled gene Fzd9, the mouse homolog of FZD9 which is deleted in Williams-Beuren syndrome. Wang et al. *Genomics* 1999 Apr 15;57(2):235-48. Wang et al. *Genomics* 1999 Apr 15;57(2):235-48. [click to see abstract](#)   
[click to see full text article](#) 


A novel human homologue of the *Drosophila* frizzled wnt receptor gene binds wingless protein and is in the Williams syndrome deletion at 7q11.23. Wang et al. *Hum Mol Genet* 1997 Mar;6(3):465-72. [click to see abstract](#)   
[click to see full text article](#) 




- 1138476 1140251 (3; LocusLink)  
click to see LocusLink entry 


- 1180967 1239254 (0; JAX)


click to view The Jackson Laboratory entry 


- 1180967 1239254 (3; NCBI)  
click to see Entrez entry 

- 1180967 1239254 (4; TIGR)  
click to see EST cluster TC110486 

- 1180967 1239254 (2; PubMed)

A novel human gene FKBP6 is deleted in Williams syndrome. Meng et al. *Genomics* 1998 Sep 1;52(2):130-7. [click to see abstract](#) 


[click to see full text article](#) 

- 1180967 1239254 (1; AminoAcid)  
click to see protein entry 

- 1242581 1256609 (0; NCBI)

click to see NCBI entry 

click to see EST BF522554 sequence 


- 1259248 1265404 (1; NCBI)  
click to see Entrez entry 




- 1259248 1265405 (0; TIGR)


click to see The TIGR Mouse Gene Index TC119282   
related protein 

click to see The TIGR Mouse Gene Index TC153906 


- 1265410 1283773 (0; NCBI)  
click to see Entrez entry 

- 1299244 1434417 (0; LocusLink)  
click to see LocusLink entry 


- 1299244 1434417 (1; PubMed)

Recent advances on the pathogenesis of Huntington's disease. Petersen et al. *Exp Neurol*. 1999 May;157(1):1-18. Review click to see abstract 


click to see full text article 

Fusion of Huntingtin interacting protein 1 to platelet-derived growth factor beta receptor (PDGFbetaR) in chronic myelomonocytic leukemia with t(5;7)(q33;q11.2). Ross et al. *Blood*. 1998 Jun 15;91(12):4419-26. click to see abstract 


click to see full text article 

Localization of the human HIP1 gene close to the elastin (ELN) locus on 7q11.23. Wedemeyer et al. *Genomics*. 1997 Dec 1;46(2):313-5. click to see abstract 

click to see full text article 


HIP-I: a huntingtin interacting protein isolated by the yeast two-hybrid system. Wanker et al. *Hum Mol Genet* 1997 Mar;6(3):487-95. click to see abstract 


click to see full text article 

HIP1, a human homologue of *S. cerevisiae* Sla2p, interacts with membrane-associated huntingtin in the brain. Kalchman et al. *Nat Genet* 1997 May;16(1):44-53. click to see abstract 

- 1299244 1434417 (2; JAX)

click to see The Jackson Laboratory entry 

- 1339043 1434417 (3; NCBI)  
click to see NCBI entry 

- 1434234 1434411 (4; NCBI)  
click to see Entrez entry 

Gene	→
Exon	■
UTR	□
RNA	◡
Simple	□
MIR	▲
Other SINE	▼
LINE1	◡
LINE2	■
LTR	◡
Other repeat	▼
CpG/GpC $\geq$ 0.60	□
CpG/GpC $\geq$ 0.75	▬

## Williams Region

Fri Sep 14 15:29:23 EDT 2001  
<http://bio.cse.psu.edu/pipmaker/>



## Annotations legend

- LocusLink : Blue
- TIGR : Orange
- MGI : Purple
- UniGene : Pink
- AminoAcid : LightBlue
- NCBI : Cyan
- PubMed : Red
- JAX : Green



## Underlays legend

- fwd\_exon : LightBlue
- fwd\_UTR : LightOrange
- rev\_exon : LightBlue
- rev\_UTR : LightOrange
- intron : LightYellow
- EST : LightGreen
- documented\_UTR : LightOrange
- 70 : Pink
- 80 : LightRed
- 90 : Red

