

Methods S1

Primers for *Aedes aegypti fru* cloning and developmental analyses

fru1: 5'-CGGCATTGAACGGCTATCC-3'
fru1rev: 5'-CCTTCGGTGCATTGAAGC-3'
fru1f: 5'-GCGTCATCGATCGTGTCTTG-3'
fru2f: 5'-GTTTGCCAGCACTTCTCCC -3'
fru2rev: 5'-GACAGTATCGCTTGATGTGC-3'
fru1c: 5'-CAATACCGAGTGGTGTGTGG-3'
fru3: 5'-GTTCTCTCTGCAGCTCTCG-3'
fruL1: 5'-TACTGTTGCAAGTTCTCAATAG-3'
fruL2: 5'-CAATACCGAGTGGTGTGTGG-3'
Aearp49+: 5'-CCAAGATCGTCAAGAAGCGG-3'
Aearp49-: 5'-GGTTGGTCACAGCGATGG-3'
dsx3: 5'-GATACTGAAAGGCGCCGACG-3'
dsx5: 5'-GCAGAATATGGGACTGGTGC-3'

Primers for *Sabethes cyaneus fru* cloning

AeaWHH+: 5'-GCTGGAACAACCATCAG-3';
AeaYQG-: 5'-GTTACCTCGCCCTGGTAC-3'
SacBTB+: 5'-GCATCCCATCATCTACCTGC-3'
AeaZNC-: 5'-TGACCTCCTTGCCGCACG-3'

GenBank accession numbers of sequences used in phylogenetic and evolutionary analysis

Drosophila melanogaster DmfruBTB, [GenBank: NP_524397]
D. sechellia DsfruBTB, [GenBank: XP_002038222]
D. erecta DefruBTB, [GenBank: XP_001979637]
D. ananassae DafruBTB, [GenBank: XP_001954108]
D. pseudobscura DpfruBTB, [GenBank: XP_001358536]
D. willistoni DwfruBTB, [GenBank: XP_002073544]
D. virilis DyfruBTB, [GenBank: XP_002056235]
D. grimshavi DgfruBTB, [GenBank: XP_001990228]
Ceratitis capitata CcfruBTB, [GenBank: ACH81147]
Lutzomyia longipalpalis LlfruBTB, [GenBank: AM090394]
Anopheles gambiae AngfruBTB, [GenBank: AAV52865]
Culex quinquefasciatus CuqfruBTB, [GenBank: XP_001860373]
Danaus plexippus DapfruBTB, [GenBank: EY257161]
Bombyx mori BmfruBTB, [GenBank: AU000406]

Tribolium castaneum TcfruBTB, [GenBank: NP_001157690]
Chorthippus brunneus CbfruBTB, [GenBank: ABD85043.1]
Schistocerca gregaria SgfruBTB, [GenBank: ADM86718.1]
Blattella germanica BgfruBTB, [GenBank: CAZ68905.1]
Nasonia vitripennis NvfruBTB, [GenBank: NP_001157595]
Apis mellifera AmfruBTB, [GenBank: XP_392552]
Harpegnathos saltator HasfruBTB, [GenBank: EFN81805]
D. melanogaster DmTRA-2 [GenBank: NM_057416.2]
C. capitata CcfruBTB CcTRA-2 [GenBank: EU999754.1]
Anastrepha obliqua AoTRA-2 [GenBank: FN658607.1]
Lucilia cuprina LcTRA-2 [GenBank: FJ461620.1]
Glossina morsitans GmTRA-2 [GenBank: DV608906.1]
Musca domestica MdTRA-2 [GenBank: AY847518.1]
Ae. aegypti AeaTRA-2_A [GenBank: AAEL009224]
Ae. aegypti AeaTRA-2_B [GenBank: AAEL006416]
Ae. aegypti AeaTRA-2_C [GenBank: AAEL009222]
Ae. aegypti AeaTRA-2_D [GenBank: AAEL004293]
An. gambiae AngTRA-2_A [GenBank: AGAP006798]
An. gambiae AngTRA-2_B [GenBank: BM620287.1]
A. mellifera AmTRA-2 [GenBank: XP_001121070.2]
Daphnia pulex DpTRA-2 [GenBank: EFX90042.1]
Homo sapiens HsTRA_2 α [GenBank: NP_037425]

Databases and web tools

-RegRNA

(<http://regrna.mbc.nctu.edu.tw/index.php>)

-TRANSFAC

(<http://www.gene-regulation.com/pub/databases/transfac/doc/toc.html>)

-PROMO (Messegueur et al. 2002, Farrè et al. 2003)

(<http://algggen.lsi.upc.es/>)

-CENSOR (Jurka et al. 1996)

(<http://www.girinst.org/censor/index.php>)

-BLASTX, BLASTN, TBLASTN and TBLASTX

(<http://blast.ncbi.nlm.nih.gov/>)

-Promoter 2.0 (Knudsen, 1999)

(www.cbc.dtu.dk/services/Promoter)

-BDGP Neural Network Promoter Prediction (Reese, 2001)

(www.fruitfly.org:9005/seq_tools/promoter)

-GPMiner (Lee et al., 2012)

(<http://gpminer.mbc.nctu.edu.tw/index.php>).

-Footprinter 3.0 (Blanchette and Tompa 2003; Fang and Blanchette 2006)

(<http://wingless.cs.washington.edu/htbin-post/unrestricted/FootPrinterWeb/FootPrinterInput2.pl>)

-MaxEntScore algorithms

(http://genes.mit.edu/burgelab/maxent/Xmaxentscan_scoreseq.html)