

Fig. S1. Hi-C map for *C. angaria* PS1010 sequence indicating linkage groups.

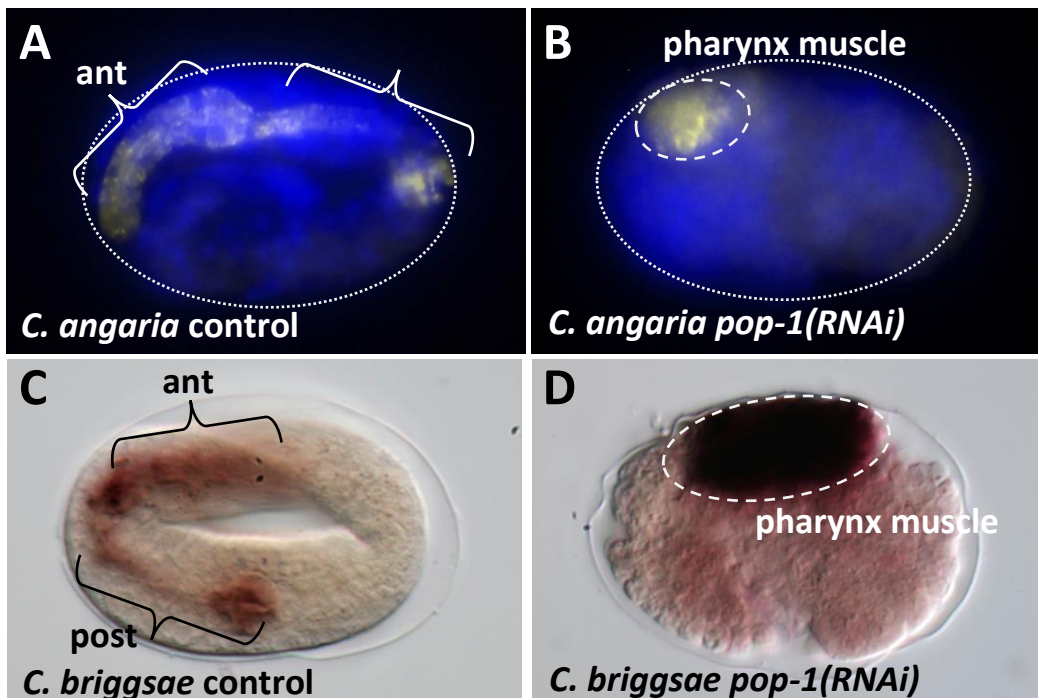


Fig. S2. smiFISH and *in situ* hybridization to detect *myo-2*. (A) Representative PS1010 control 3x stage embryo stained with DAPI (blue) and *Can-myo-2* smiFISH probes (yellow). Staining detects the anterior and posterior pharynx (ant ph and post ph, respectively). 10/10 embryos showed similar staining. (B) Representative arrested *Can-pop-1(RNAi)* embryo stained similarly as in (A). Ectopic *Can-myo-2* expression was not apparent in 20/20 embryos. Because *Can-pop-1(RNAi)* embryos do not elongate, proper morphogenesis of the pharynx does not occur. (C,D) Images from a prior work where ectopic *Cbri-myo-2* tissue was detected in *Cbri-pop-1(RNAi)* using an older *in situ* hybridization protocol (Lin et al., 2009). (D) Extra *Cbri-myo-2* expression is seen because of an E to MS transformation, resulting in extra pharynx muscle. Embryos are approximately 50 μ m long.

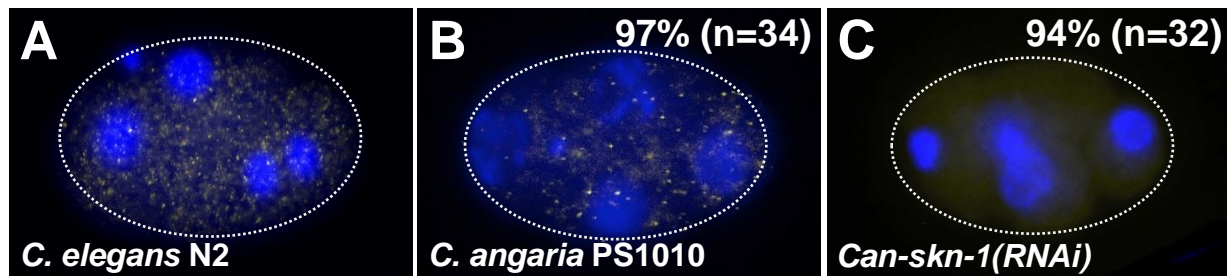


Fig. S3. Expression of *Cel-skn-1* and control for effectiveness of *Can-skn-1(RNAi)*. (A) Expression of *C. elegans* *skn-1* by smiFISH. (B) *Can-skn-1* mRNA was detected in 97% (n=34) of controls. (C) *Can-skn-1* mRNA was absent in 94% (n=32) of *Can-skn-1(RNAi)* embryos.

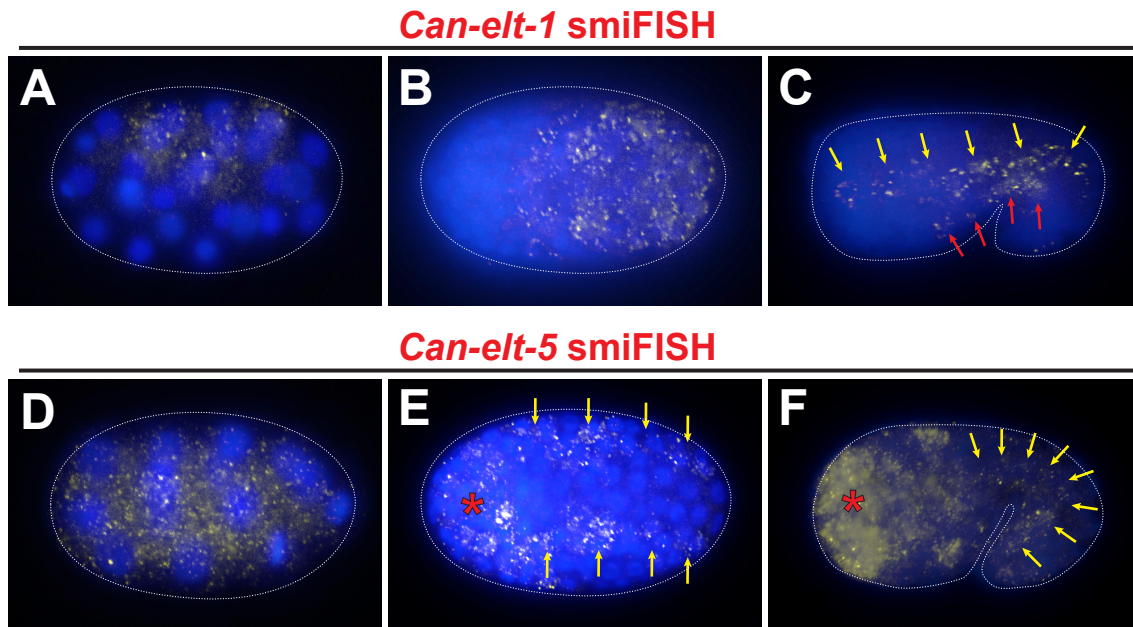


Fig. S4. Expression of *Can-elt-1* (A-C) and *Can-elt-5* (D-F) by smiFISH. (A) Expression of *Can-elt-1* was seen in dorsal hypodermal precursors at gastrulation stage. (B) Dorsal aspect showing widespread expression in hypodermal precursors at late one-fold stage. (C) Expression in lateral seam (yellow arrows) and ventral hypodermis (red arrows) at 1.3-fold stage. (D) Widespread expression of *Can-elt-5* in a 16-cell stage embryo. (E) Dorsal aspect showing expression in anterior cells (*) and lateral hypodermal cells (yellow arrows) of late one-fold stage. (F) Anterior expression (*) and lateral hypodermal expression (yellow arrows) in 1.5-fold stage. Expression of *Can-elt-1* and *Can-elt-5* is similar to their orthologous genes in *C. elegans* (Page et al., 1997; Koh and Rothman, 2001). Anterior is to the left and dorsal is up in (A), (C), (D), (F).

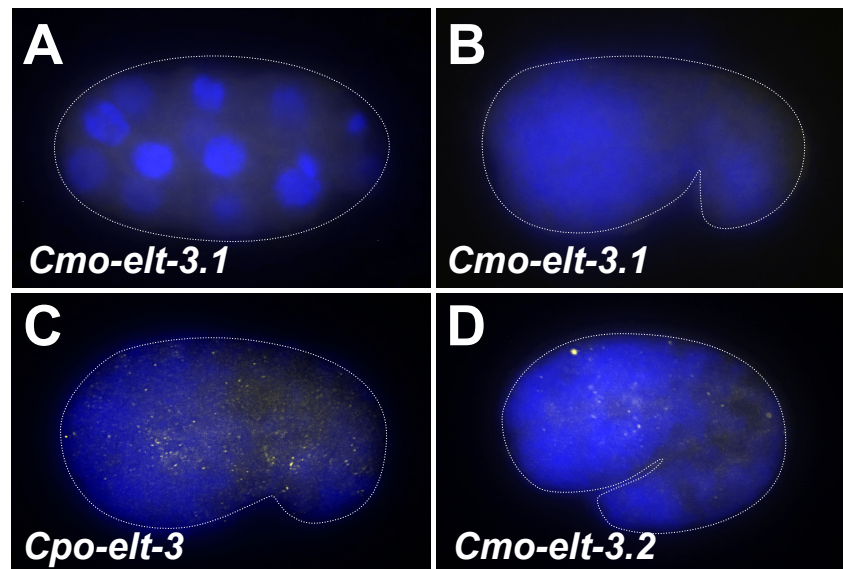


Fig. S5. Absence of embryonic expression of *Cmo-elt-3.1*, and hypodermal expression of *Cpo-elt-3* and *Cmo-elt-3.2*. (A) No expression of *Cmo-elt-3.1* was seen in early embryos (2E stage shown here). (B) No hypodermal expression was seen in later stages (comma stage shown here). (C) Expression of *Cpo-elt-3* in hypodermis of a bean stage embryo. (D) Expression of *Cmo-elt-3.2* in 1.7x stage embryo consistent with hypodermal cells.

Table S1. *C. angaria* genome sequence statistics

	<i>C. angaria</i> (this study)	<i>C. angaria</i> (Wormbase; PRJNA51225.WS28 5)
Assembly size (Mb)	71.4	106.0
Number of scaffolds	6	34621
Average (kb)	11,895	3
Largest scaffold (kb)	13,323	868
Gaps (kbp)	6	11,442
GC (%)	33.7	35.7

Table S2. Tests of synergy of *elt-3(gk121)* with mutants in the *C. elegans* gut gene network Percentage of embryos containing gut and average number of gut nuclei made. An integrated *elt-2::GFP* reporter transgene, *wls84*, was used to mark both the presence of gut as well as to count the number of gut nuclei at the end of embryogenesis (Owraghi et al., 2010). In pairwise combinations, none of the comparisons of mutant; *elt-3(+)* with mutant; *elt-3(gk121)* in gut nucleus number is significant ($p > 0.05$ for all, *t*-test). Single *elt-7* null mutants make gut 100% of the time (McGhee et al., 2007). We did not test *elt-7(tm840)*; *wls84* alone. However, a comparison of *elt-7*; *elt-3* with *elt-3* alone was not significant ($p > 0.8$).

Strain	Genotype	% making gut (n)	# of gut nuclei \pm SD (n)
JR1130	wild type	100% (40)	19.7 \pm 0.8 (40)
MS2046	<i>elt-3(gk121)</i>	100% (40)	20.0 \pm 0.5 (40)
JR2719	<i>end-1(ok558)</i>	100% (40)	19.9 \pm 0.6 (40)
MS2048	<i>end-1(ok558); elt-3(gk121)</i>	100% (130)	19.8 \pm 0.6 (30)
MS2041	<i>end-3(ok1448)</i>	95.5% (201)	17.8 \pm 5.3 (192)
MS2042	<i>end-3(ok1448); elt-3(gk121)</i>	95.0% (161)	18.1 \pm 5.6 (153)
MS2049	<i>elt-7(tm840); elt-3(gk121)</i>	100% (104)	20.0 \pm 0.6 (30)

Table S3. Nematode strains used in this work

<i>C. elegans</i> strains	
Strain Designation	Description
JR1130	<i>wls84 [elt-2::NLS::GFP::lacZ, rol-6D] X</i>
JR2719	<i>end-1(ok558) V; wls84 [elt-2::NLS::GFP::lacZ, rol-6D] X</i>
MS2041	<i>end-3(ok1448) V; wls84 [elt-2::NLS::GFP::lacZ, rol-6D] X</i>
MS2042	<i>end-3(ok1448) V; elt-3(gk121) wls84 [elt-2::NLS::GFP::lacZ, rol-6D] X</i>
MS2046	<i>elt-3(gk121) wls84 [elt-2::NLS::GFP::lacZ, rol-6D] X</i>
MS2048	<i>end-1(ok558) V; elt-3(gk121) wls84 [elt-2::NLS::GFP::lacZ, rol-6D] X</i>
MS2049	<i>elt-7(tm840) V; elt-3(gk121) wls84 [elt-2::NLS::GFP::lacZ, rol-6D] X</i>
MS2582	<i>elt-7(tm840) V; elt-2(ca15) X; irEx798 [pGB598(Can-ELT-2::GFP), pMM809(unc-119::CFP), pDP#MM016B(unc-119(+))]</i>
MS2583	<i>unc-119(ed4); end-3(ok1448) V; irEx798 [pGB598(Can-elt-2_5kbp_promoter::ELT-2::GFP) + pMM809(unc-119::CFP) + pDP#MM016B(unc-119(+))]</i>
MS2584	<i>unc-119(ed4) III; end-1(ok558) end-3(ok1448) V; irEx498 [pMM768(end-3(+)), pMM824(unc-119::mCherry)]; irEx798 [pGB598(Can-elt-2_5kbp_promoter::ELT-2::GFP) + pMM809(unc-119::CFP) + pDP#MM016B(unc-119(+))]</i>
MS2606	<i>unc-119(ed4) III; him-8(e1489) IV; elt-7(tm840) end-1(ok558) end-3(ok1448) V; irEx804 [pGB612(end-3::END-3upstream::CanELT-3DBD::CFP) + pDP#MM016B(unc-119(+)) + pMM531(unc-119::YFP)]</i>
MS2612	<i>elt-2(ca15) X; elt-7(tm840) III; irEx803 [pGB608(Can-elt-2_3kbp_promoter::ELT-2::GFP), pDP#MM016B(unc-119(+))]; irEx808 [pGB619(hsp16-41::CanELT-3B::CFP) + rol-6D]</i>
MS2617	<i>elt-2(ca15) X; elt-7(tm840) III; irEx803 [pGB608(Can-elt-2_3kbp_promoter::ELT-2::GFP), pDP#MM016B(unc-119(+))]; irEx809 [pGB620(hsp16-41::CanELT-3A::CFP) + rol-6D]</i>
MS2625	<i>elt-7(tm840) end-1(ok558) end-3(ok1448) V; irEx814 [pGB618(Cel-end-3::Can-ELT-3B::CFP) + pMM824(unc-119::mCherry)]</i>
MS2629	<i>elt-7(tm840) end-1(ok558) end-3(ok1448) V; elt-2(ca15) X; irEx813 [pGB608(Can-elt-2_3kbp_promoter::Can-ELT-2::GFP) + pGB618(Cel-end-3::Can-ELT-3B::CFP) + pMM824(unc-119::mCherry)]</i>
MS2636	<i>elt-7(tm840) end-1(ok558) end-3(ok1448) V; irEx798 [pGB598(Can-elt-2_5kbp_promoter::ELT-2::GFP) + pMM809(unc-119::CFP) + pMM016B]; irEx814 [pGB618(Cel-end-3::Can-ELT-3B::CFP) + pMM824(unc-119::mCherry)]</i>
N2	<i>C. elegans</i> reference strain
Other species	
Strain Designation	Description
EG4788	<i>C. portoensis</i> reference strain
JU1667	<i>C. monodelphis</i> reference strain
MS2628	<i>C. angaria elt-3(ir79)/+ X</i>
PS1010	<i>C. angaria</i> reference strain
RGD1	<i>C. angaria</i> wild isolate

References

- Koh, K. and Rothman, J. H.** (2001). ELT-5 and ELT-6 are required continuously to regulate epidermal seam cell differentiation and cell fusion in *C. elegans*. *Development* **128**, 2867-2880.
- McGhee, J.D., Sleumer, M.C., Bilenky, M., Wong, K., McKay, S.J., Goszczynski, B., Tian, H., Krich, N.D., Khattra, J., Holt, R.A., et al.** (2007). The ELT-2 GATA-factor and the global regulation of transcription in the *C. elegans* intestine. *Dev. Biol.* **302**, 627-645.
- Owraghi, M., Broitman-Maduro, G., Luu, T., Roberson, H., Maduro, M.F.** (2010). Roles of the Wnt effector POP-1/TCF in the *C. elegans* endomesoderm specification gene network. *Dev. Biol.* **340**, 209-221.
- Page, B. D., Zhang, W., Steward, K., Blumenthal, T. and Priess, J. R.** (1997). ELT-1, a GATA-like transcription factor, is required for epidermal cell fates in *Caenorhabditis elegans* embryos. *Genes Dev.* **11**, 1651-1661.

Supplementary Materials and Methods:

- 1) gene models - sequences and coding DNA sequences (CDSs)
- 2) RNAi clone information
- 3) plasmid maps and cloning information
- 4) smiFISH probesets
- 5) CRISPR/Cas9 PCR primers and sequence of *ir79* allele

1) GENE MODELS:

Can-eft-3 (eef1A.1)

join(2248..2391,2447..>3436,3494..3760)

```
gatgttggaaatagtgcggaaacgggtgatgacgtagagaaaactgtagtcttacgatagcattacattttgcggcacaggaattgggc
taatccggaaaaaaatataatagaatttcaagatggttctatccagtcacgtaccatcgactatttaggattcatatgaaaaatgac
ctttctgaatcagcctagatgttcgagttccaatcatgaaattccagacctggaaattatgaggttcagaagttatattcgaatgaaatt
tgcaatcccattttgtagtgggtgttcttgaactttgttaggaaaaagattctccaagtctgcactaaattcaaatgcaatttccaga
tggtcagattctacggcgcaatgttctggaaggagatgtgtgattgtatggaagtaattggacacgctactcgacaaattctatcgaca
agcatacaaattaggcaaaaagataaccagaagcgtttatcagcaaaatgctgtgtcagtcacgaaggattgaatttcatgaaagaa
caattgaattgattcatcgcgatgtgaaaccatcgaatatttattgaataggcatggtaagtgaaaattgcgattttggtatctctggac
attgacaaatagtttagcaaaagggtcggtatatacgagagaatttctataaaaaaagaaacgatttcagacagttcaagcgggtgtaa
gccttatatgccaccagagcgaattgatggcgagacaaaaactgcatatgatgttcgagctgatgtatggagcttgggaataactatca
ttgaaattgctactggaacacaccctacgcaaaatggaaaacaccatttgatcaattgaaacaagtggttcgagagccccctccaa
aactccaatgaatgaaggttcagtgaaagaatgccaattattgttcaaagatggtgggtagttgtttgctcattaaaataattgaactg
ggatttcaactcaaaatgaaaacgctactcaaaaaacagaaattaaaaatagaacttactgcagcctcgaaaaggattataacaatc
gacaaaaatatacccgaacttctgcatgaaattattgaagcggcgagaaatgacaagcaattcagtatgagtcgatttataatgag
gtagacaacaagaaaaaatgaaatgtgaaataatttctatcataatattttatagattctcgacatgtaaaatctcatcaatcgaaca
tcagtttccacgtgtattgcaattgaacaaaatacctaatacccagttttatctagaaattttgaaatttaataatagtaggcatctttttt
gactatcattgttctatttctttttatctttatgcttcaatttcagttgctcccttttagtcattcctattgattttgttgttcttagatct
gtgccatcgtttattgaactaaactgaagatacatttccaatgtgatcagaaaaaatagatttctgaattatataatataatattttat
tctttttctcatatattttatcttgccattgagcaattattcgatttctttatctctcctttttctcctttttcgcacacgaaatttaacatttctca
tcgacttgttcaaaatcataatcatttttaattttcttcttcttcaagttctcatttgaggtagatttccctgtgaataaatgaataaata
aataatctgtggtttgtgtgtctacacgctcccttttctttgattatcgttttttttgtctttatcaaaaatattggttctgcgctcgtaaaca
agcttcaaaaaaaaacgagggcgagaggagagaaaaacacagattacgcacacaggggccaagaaatagtagtgaacaaga
aagcgagaacctggcgagatagtggtgttagagataaaaaagatgaaggcgcattgatttttgcggcgctgtgtcgggtggcgctc
cctttgctgatgtggacgcttcaattttataatcacaattgtggcctaaatttttaggagagctgtcattcttcttcttttctgttctgttc
acacgatttctgaatttttctgatttttctgaaaaatcttctcctaaatattttacagtgaaataaccctcaagcttcaataatgggaaa
ggaaaagggtccatattaacattgtcgtcatcggacacgctcgactccgaaagtccaccaccactggacactgatctacaagtgagg
aggaatcgacaagcgtaccatcgaaaagttcgagaaggaagctcaagaagtgagtttaatttcagctggaataatttctgaaattca
atataatttttttagatgggaaaagggtcgttcaagtagcctgggttcttgacaaactcaaggctgaacgtgaacgtggatcaccattg
atcgcgtctctggaagttcgaaactccaagtagctacatcaccattattgatgctccaggacatcgtgatttcaagaacatgatcac
cggaactccaagctgattgcgcccgttggctgctgcttgcggtaccggagaattcgaagccggaatctccaagaacggacaac
ccgtgaacacgctcttctcgcccaactcttgggtgcaagcaattgatcgttgcctgcaacaagatggactccaccgagccaccattctc
```

tgaggcccgtttaccgaaatcaccaacgaagtctccggattcatcaagaagatcggatacaatccaaaggctgtccattcgttccaa
tctcaggattcaacggagacaacatgctcgaagttcatccaacatgcatggttcaagggatgggctgtgaacgcaaggaaggaa
atgccaccggaagacccttctcggaggtttggacgccatcatcccaccacaacgtccaactgaccgaccactccgttccactcca
agacgtctacaagatcggaggtatcggaaactgtcccagtcggacgtgtcgaaccggagtcacagccaggaatggtcgtcacctt
cgccccacaaaacgtcaccactgaagtcaaatccgtcgaatgcaccacgaatcgtcccagaagccgttccaggagacaacgctc
ggattcaacgtcaagaacgttccgtcaaggacatccgctggtcagctgctgactcgaacaagatccagccaaggaggctc
gcacctccacgctcaagtcattatcatgaacctccaggacaaatcgccgctggttactccagttctcgattgccacaccgctcac
atcgcttgcaaatcaacgagctcaaggaaaaggtaattagaaatcagaacaacctcagaatcagagatttaattgttcaatattata
ggctgatcgtcgtaccggtagaaggtcgaagatttcccaaaattctgaaatctggagatgccggaatcgtcgaactcatccaacc
aagccactttgcttgaatcgttaccgactacgctccactcggacgtttcgtgttctgacatgagacaaaccgctcgtcgtcggagta
tcaagtctcgtcagaaaatccgatggatcatcaggaaaggacccaaggccgccccaaaaggccggagccgctcaggaagaag
aagtaataattgtgattcaatgataactgtattgtattatgattactcctgaaaattatctgtttctgttactccatcccacattgattaa
taattatctgttttcaatcattgtgccccctttttcttctcgtttatccaatccgtttctttacataacttaacccccatcaattgctggt
ttcgaacatattttatatacagatcgaactggttgtttctatcctgttaacaaaaattaacaaacccaagttcattctactgtatcct
gtcttccctgatcatcaccgtcccccaaaaaaaatftttctatgttagaaaatgtgcaacctatgcatatftttgtcaaaaatgaaata
ataaagtgttgtaaaaaaaatcaatcgttgtttgatcatcaacttggaaatftttgtgtaaacagcatggtctcattttactcgataaga
taagaagaagaaggctcgtacctcgaatggtttgtttttgtttcgaaaagagcgacaatggtgagagtaaacaaaaatggtatt
gaaggtcagattgttgaacagtggtgacgatggattgggatactttaaactctcgttattgttgcagatttgcactgtttgtgacaattg
gaaagaggggttgcggtcaaacatcaatgagtggtttgtttgtctcattttacagacaaatag

Can-elt-1

join(5001..5301,5418..>5798,6104..>6264,7235..>7360,7574..>7729,7840..7974)

attcctgtgagtaagccagaaatattttgctttatcagttttggaactttattcattcttccgagggttactgtaagctttgagttgtaacaat
tgatagttctgactacagaatcttacgattctataagccgagaagcctaaagtcaggtttatctgtcaaaaaattcagattatcgattttc
aaaatgtatttttaaatcatggttaaaagttgtctcaactctgaaattcagaaatgaaagcagtttcataatacaatcttcaactaa
caagatatttaataaaaaatcacatctaaagtcagactagcatcttaattcttccggaagcctaatacctaatacctaatacct
tagcctaactaaaaaaagttacttccagctgtcttaatttggtgcaatcttgataacctcacatcttgatttccacaaaatctaga
ttcagttgattgaaatcagatcacaagttagtcaagttccgggttttctaattttctccattactgaaatttccagagctcctattttgatgat
gtcggcgaaaattgcacaaaaaagataattggtgtaacattttttgatctcaaaaaatggacagtgatcccccaatataa
ttgggtgaaacatacacagagagattttcgatttagattaggacctacaccgtattcggttttgagaaagaaaatccacgtccct
cgcgactgactcgaaaaacgagcttctcctcatttcttttcttaattgtatttgggtgcgaccaggcggtctcctttttgtcctgc
gcctcgttgaatacgggtattctgttgtgacggctcatggtatcggctcaaaaaatctacattttgcctcgttttctgtcgcggatgaaa
aagaatattgtgagaaggaacacacaaaaactttttattcccgaacatttctgaccagattttgctggattttggggaggagggt
gggatactttttggaatcggaaaccctgaagttgataaaatctaaattgacttgattttttgaaagtctaaagctgagatattccaaaatt
catagtttaccaaagatctcagaagggcctaataatttttcaatttttaaacctctcactctcccaccttctcccctaaaaaaccaa
aaaccaataaatcatccaatctcataataatattacataaaaagattaatgttgattacataagactactgtaattttctatgtctcctcattt
ttcggcagcatgcataatgtttatacaataatataatcatcatgaaactctgaaggctcagatttcccttctttttctttagttccaaa
actaatcccactgctccaatttcttttcccttcttcttccccaaatfttctggcaaccaaacaaaaagccgcgcgctatttaatga
attatagatgattatacataaatcagagggggagagcccaagtgaagaacagccgggtgggtgtattttggtggtcagattttatgc
aaatacaattggtgtgaggattggtgtgatggatggattgagaatgcttgaatgatttataactataatataataagaggatgtgtgga
aaacagagaaaacaacaacttaattccctattttggatgaaacattgaaataaatttcatgatgtgtagattgattcaaagagaaagtt
gcgggcgaaaatttgggtgaaaccacgtggcgccgcatatccacacctgccacattggtgtgagaatgctggaattgttttgatg
atttgcgaaaaaaactcgtctacagtagcatacagatttgaacaaaattaggaatattgatagttttggagggttactgtagatggt
gataactgaaaagttttgatctacctgaaaatgatcttcttggaaaatgtttcaagagattactgtacctgagaattacgctaactaa
gacacagtaacttcaaacgagactcgaaaaagtgaagtttcaaacagtagtctcaactatgaatgaaaatttctgagctacag
agtccaacacattttcaatattcttccccaaatcccataattctctacagtaatccaaaaattcgaacatccaatttctcattcctcc

gtcttgctcgtgtttcaacattggtgctatcttctatataaggatgaacaataggaaaggaaattgtattaatctgaaatctcagaaacc
gggtgctactgactcaatcttggaaactccaccgaagaaccgactactcctgctgattctcgatgcaatccgctgatggcgaaatgga
acatctccaggaataaattatattcaaaatgcatctgatttttctctcacaatcattcagaactcatctccactggcaatccgctcat
caaacaccaacaacaactgcacatgatcgttagttgatttgcgagaaacagaaaaaacatataaaaagcatggtgtgttttgatca
aagtgaatgatgataaatcttcaagttcagatgtttatctccagtagctacaaccactctcctctccaattagtagacaacaactctct
ccagttactcaaccttctcaacaacttccacacctttacatccaattgaaccaacacaacattaaaataattattttcaataaagttat
ttttctgactcattcaaaaaaatgcaaaaaacttccctcaaacccttttctgttcttttttcaaaacaataaaacgatcgaatat
aatttgtaataaatgtagggcaggcttggcgtcatgatgttactgataaggctacgtactctatattgctggctgtcaaatatgtattat
acgtgaataaacagaataaattcatttccagactagaaaaacaggaaaaatagaattttgtgaaaaataagataaattttgaaacattta
tcaaaaagttggtatgattatggtatcgtcagaataatgtgataaataatttatcattgacagagaccgctggttctgataccaattttta
cagataaagttgtcccacagttttgagtttttgcgaaaaatattgattgacttacttgaactcaatttcaactatcttgcgaatattc
caccttattgtgagatgtcttattccctggaaaaattgagtagtctagaaaaacatcaaaaattcagatttagaaaatttctaaaagctt
tcaattttcatttctattagattttttggggacagtttagtttcttatgaaaaacatcagaattttcagtttctcattatccttctctggc
cctgtaattctcggcattatacaaaaactgtgtatttctggaacaagagaaaaacaattttgaattgttccaaagttcaatcaataaaaatg
tatcgataagaagaggaaagaaaagataagcggattacagctaaaactataagcctacataataattcagaggtaggaaaaaac
ggaattttagaatgagaaggtttttagctgactcgagacaatctattttaaaaaattctcaaaacatttactacaataaacagtgaaat
ctggcttggtttaactcgaattattataggttttttatgaatacagctcaattcgataagaaatctgtgattttgatgttcagggtgtaggtg
ccaaataatgaataaggtaccagatttgaacaatgattaccaattaaaaccaagaaaagttaaagcttttagggcaggagaac
agtccaaaataattgttttcaacaaaactaatcttctcaggccaccgttaagttttgagcctaaaagattttttcagctttgttaatttacc
gacgaatatataaaaaaataattcattatattcagactcactaattcatcagagtttccaaaattctgaaatctggatcagtttttagtgct
aaccaaaaaaattggatattcatcaaatccaccagtttactaaatcgatctcgtgaacaacgctccgaactgcagattgggataatc
ataaagctaaaaggaaccaaattaaaaactgattaagaaatcatagaagataatgcttgaatggaagaaacaaccaaaaa
ggttttagaattctaacagaagaaataaaaaatcagacctcaactcagttttatattgaaaagataatgttatctttaaattgatatttcta
ttcatctgaaccatataagacaatcaattgtgttttattgataaaaatattgcttttttaattgaaaatgttccgaatgtcccctataattca
gcattcccattttgcttccccacattgtatgataaagtcgatgaagaaaaagttgaccggcatcatataggcaactgataagaat
accgtatacttcatgcacatcaactttttgttccacgacaatgcacattggaccttgaatcatacaaaaaatgagaaataatttcgag
aacaggatttcgaaaattagagaaaaatagaatgaaattatgatgtgaaataatgttgcgaaaaaacgattaaaaatataattgatta
cgttatcgaataactggagtgattatcaactgtagagtcgctgatataaaaagggtgctcagttcaacatatcgctatcactgga
acataaaactcaaaaactgataataagttttcgtagttcatttcatgtcataagaaatgaatcaagtttccagtgctatgatgaatc
gttaccagaatgaagaattttggtgaaaatttttagtgagaaatcataggttaggaaacattgttcaacggtaactcttgttggcacttt
gttgaatctgaaaattatgactggaaaactgaaggctaagctccaaaaacaatctcattgataatttcatgtattttccaaaaata
acttttttcagaaaattcataggagttgagagaatcagttcaatcatatcacaactccataatcgaaaatcaactcgaattaaaatt
attttctcaaaagctcgggaaaattcccaaccctttttccagagccaatcaacaacgtttgcagctacagtaccaactcgcgacta
gaaaaggccatataaggagaggggaaagagcactatttcccttttctcatttctcatttccaatgtgtgcggggctcataatgactgat
aagataacgacagaatattggcgttgggaagacagttgatggcttgagcatattcttctttttgtcggatctcctaacgaatatctgaatt
tctctatttttcataatctattcgaagttctttttttcagaaaaatggatccaagatattcgatcgagagtcctggatcgatagtagcgt
ccaccaacattgcaactcccaatccaacaaactcaaacacatactcttatgcctgatgatggcagagttcgatgagtgaaactaacta
gaggtagtatttctgatgttcttttacaacattaattttttcagttcgaactgatcctttgatggataggcaaggtttatcggctcattt
gattacaatgtaagtttgcactaatagaaaaataatgactgatcttcttttccagcaacttccgaaactggaacaaatcaagattatt
tgtataacacttctcaatttttaacacatattcaactcaaccgctccatcacaataatcactttatcatcatcgaagttggccgggaaat
tttgaattcttgaatgttctgatttcaacaataagaaaaatatttcaagacatcaaaactccaatttttaacagattttacgataattcggcattta
taccacaacaaccttctcgcgccagcaaatccagaatgtgtcaaatgcgcaaatccagtcatttccggaagacaagttgatggtggata
tatgttgatactttagtaattctaattgtatattgattgtcacgaattcaacaaaactattcgatgccacttctctgttcaaccaattgaacc
tgctccaattgaacaaattccacctccagcaccagcaccatcaaaaccacaaaatcatcaagtaacaaaaaagctggatcagctg
gaagcacaatcgccgacaaggattggtttgtcaaattgtaattggtacaaatactacactttggagaagaaatgtcgaagggtgaacc
agtttgaagtgagttattcaaattttaattggaatatcagaaatgtgaaagcttatttccagcgcagttgttctgtatttcaaatgcatag
tataaatcggccagtgcaatgaaaaaagagggacaacttcaacaagaaaaaggtattttttcaaatgaaaacattgaaacaact

tgaaaaattatagaaaaatgaagaatagtgatcatcaatgactccgacacgaccaaaagagcgtaaatatgaaaaacgaacaa
aacagaaaactgaatatcaagcaaacgcatttgcttgaatgctcatcaacaaagccaaaatccttatagtaattcacattcgc
atccagtgaaccattgcattatacaggtgagatcattcgcgaagtttatttcaaaatttttaaataatatacgttccagaaccatcgttag
cttcatttcatatccacaatattcatcagaaatgaaaccaactattcaaatgatcaatcaagatgaagaagttaaagcagctgcgaga
gatctggaagaggaacaataattcaactattttcaataatttgctctgatttacggcgtattttacccttttcatccatctcaaataggata
tgtaaagatttgatacatatttttttgcataataactcaataaatttatattcatattgtagtttaatgctttcagaaaaaacacattc
ctgtgaaatataaattacagtagcatttccgaagttgcaagatgagcattctgggtaattgtgaaacacaacaaaaagaaataat
cggaatcaagaatgaatggaatcagaatctcggcattccgaaaccgatgggttttcggaatgagactaacgctggaacacattccg
aaactttcgaataatctgaatgtttcatcgacctttaaggtttaattaaaaatagtgaaatttcaataaattatgaaaaagtgatgaat
tattacccaaaaaatcatcctataatttcaataaaaaaatgtttcc

Can-elt-3

'a' isoform: join(9306..9424,10061..>10331,10439..>10533,10581..10713)

'b' isoform:

join(7159..7247,7294..>7442,8921..>9136,9319..>9424,10061..>10331,10439..>10533,10581..
10713)

tctacagtttctagaagagttcgttgaagagatagatttctcaaaattccaaccaataggtcatagtcggtcgcattactctgaaattag
gtaatgttgatgggtgagatgaaaataattttctggaaatgtttccctatttcaaaataaccgtttgacctcatccaatgcaagattca
aatcgattgtattttaccaggtcatttttgagcgaaaaaatgaaattgtttatcaaatcattatttttgaattaacatagtttgagtata
attatcacaaaaactagaaattctatatattttcgaaaaaatgggtgatgacctcatccagtgcaagatacaaatcgattgtattttac
accgggtcattcttgagcaaaattgaattattatcaaatcattattatctcctaattaacatagtttgagtataattatcacaaaaacta
gaaattctgaaattttcgaaaaaatgggtgatgacctcatcgagtgcaagattcaaatcgattgtattttaccgggtcatttttgag
caagaaatataaattgtttatcaaatcattatatactgtgaattaacaaagtttgagtataattatcacaaaaactcacaatccagattt
ccaatcggtaaaagaataactactaactcgtcctagtcattatcaatatactctctcatgctttgtgaatcaataagaacatcagcacga
taatcaggctgattcaaagcaccaacaagttctgaaaaatgttcttatcttaacaaaaacatttcaaaactacctctttgcagtg
gtattgggacagatctcgagcgcagtgatttctggaatgtttttaaattagaaaaatgaatttagtaataaagaaaaagacatac
cttttcagtgatcagattcacataggcacatggaaccatccagtcacacccatccatctgtgttgag
tgatttgataatcattttatcaaaactcaactgaaaattcgaacaaaattacataataaactcaaaaaataccacctcgtcattatt
cgttccctcaaatgtgattggcagcgcagtcattggagatccagaatctgaagttccattttgcaaaaatggaacttttcaagat
acaattgttgctagagagacagagacaaacaagaaatggggcagagacgcagcgcctctcatattttatgattggggcgtc
atttctcctgtcccttttattcattgtttgcaactctctattttccattatatttctcatagttatttgaaataagttattccttctg
caatccaattatttctgatacaaaaaattatatttgaaaaaacgataaatttcaggtaaatggaatgagatcattagc
gaatggaagtttgccgcatcatttagatcagtggaagaaggtggaagaacgtgtgcaatggtctccgtagttccaccaacgt
gaggatgctggaagtgagattgtatattgagagtagaaacagtaagattccgagaatttcagattccaacatataaaagcattg
cgacacgagaatttgccaatattggatctttcagatgctctttagggtgttttcaaaggggaatattcaagaattttatgtaaaaaaa
ttgattgattcgaaaattatgcaattctactttcctcactcagagattataaaacattttttccagcaaaaaacttggttatcattgat
ctgaacatcattatcaactgcaacaactttgtaaaaaatacaaatctcagtgagatctccccactttctcttttcaacaactttct
cattttcttttcagatctttggaagtattgattatctttcaaaatagcaaaaaggttggaatattctatgaacaaggatattgtcacggca
atttgatattcaaatattgaagttttcaataaaacctatcaaaattcgtttggcaagctatgccttatcgaagttagaatcaacat
atcttatcaattcaattggttatcaaaaactttcagatatttgacagatttcggtgaagattccgaatcattattatcaattcgcatattgtc
agctccagaaatatttagtggttcagctcggaaaaatcagatgtttggtcatttggtatggtgtcaacaatgtatacaaaaaact
gttagtgattattggtctggtccacaattatttcgattatcgagaatgctgtaaacgatagggttttctggtcataaaataatgtcatcaa
aattgtttttatagagaatgtaactcaggtttgtcaatacacttcaaaaaacaactgattatgagaaaaatgatacgggtataattttgt
ttgttttttttagaaaaaaaacttcaattccagctcgaaaaaatattatcaatgtaacgcttccatcaaaagagaccaaca
atcacagaaatattgaaagatctgaacctgaatgattctgaaattgaagattttgaatgtatagataaaatgctgttcgagaagagatt
caggagagaatgaacacggaaaaatgtttattttatcggaatgccaattgaagacgcggtttttcttgaaaaatgagtgagcaagtt

gtgaaagtattatgattcgaaaaggtgtatacaactcgagcaccggttcaactgtccaaggtaccacttttcagggaggactaag
gttttgatgaggaaatgaaatgcaaagttggatttggattcctcaaaacgtcagattttgaaaaataattatcacggaaaatatttttattt
cagctcggatgacgaagatttggttttcgaaacgaggaaagtcgtcaatttcagtttgacgattgtctgttattctgccagacgacaa
acttctagagaaaatcaagttgaaaataaccgatgacataagaccaatattttgcccagaatcactgattcaacagaagataat
tattgacagaaaaacatcttcgtaactgtgtatcaaggaaaaagatgtgaagatcaggtaaaaaatgattatttttgcaatctcatac
atttattctcaggcgcagagaatgtcaattttgaggcatttagtgattgcatacaattgacggatggaagagttattgcgaaaagag
gctgttagatattccaccagtttgagatcaagagttggagatcttcttcctcatgtggaggatgaagattgtttgattttataattggat
actctgcaccacatactagtgtacagcgttggatgtatccaagatgtcatcaggtagatgtgaaggattttcagaaaaagttt
ctaaagatgtagaacacgctttctgaaaaaaaatcgataggaaaagatctttatagaaaaatttaatttctcgcatttaaatcaaca
acattttccagtacgaagatgatgacatcaccagcagcccattctagttacgacgaattctaaaagcttggctgtatcaaacacaa
attatgtttattggcaaggatgtgacagtttagctgccccatttctacttaactcaatgatcctcgtgagttttttctagatattgaaatata
gatttcaaaaaattcagagattgtcttccgtgctaaacgagtttacaatcgatacttttcaatttttctacgcgataactctgctatca
ttcaaggatgattgatcaataaattgtcttcaatcattttttctcaccaccctacaattcgttttcatttcagaatatctgcccgtttc
aatcacttactgcatatgtcgtatgcccaattatatacacatttagcagatctcgggttttcccggaattgtatgagattccgtggttttgaca
tgtttgctcagcttttaccatgataaattgtatcacgtttggattatgttctactcatgatacatcatttccactgatggttgattggctgt
gatgaaacagttgagaccaagattgattgattcgtcgttcaatgatgctattttattgtttagtgtatctaccaggtaaacatttttcttcaag
cattgttcagaactgtgtagattactggttaagacctccccatttcaaaaaaagatcattcataaaaaactttaaactggtcttgaga
atttttagtattatctatgacgatttattatcactattaccaatactcaagattgtttttttaaactatcaaacatatgtgaagcgtgtttc
aatgaaacaaatctggaatctatgaaaggttcaaaaccataactttttacgtcaatttttcaagtaacaactgaattctacagaaa
tcagaccaattgatctagggaaaaaatctagtttaggaatgtaactctgtaagaaaaatgttcagctcaatttttaagccccctttcaca
gcctcaaaattttgcttttcaaacagacaatcagcaatagattttcagacagtttttttcaaacatttttcttaaattctgataagatta
tttagcttctcataagagacaaagagaaaattgtagtctgaaaaaccctgataaaaattcgaacgtttttttctaaaaaaattgtttga
acaaatgtatgtaaataaaaaatgaaaaaggaaaagtacaacattttcagatttaccatcgataaaactcatcgaaaatgctgt
gtattatcaaaaccattccaccaagttgcacttttcgagttcacgatagccatggaaggtaaacattttttataattttcaataaataat
taaataattttccagccacatattccgacgccttataattgaatcgagaaatctccccattcaccgtgtgtaactcaagagctcaatt
gtcccagaatgtcaaaagatgagttctgttggcgtgtacaccagcaagatgtgtgtattgatatcagggtcaagcatggagtaagatct
tttcttttttagagtaatagcaataataataaattgaggagataatataatgtgaacaaagagaattgtactttatcattgatgagca
aaaatgacaacatgtggagggtacttaggtcaaaagtttgtgtcgtgtttttttgtttgcccataaccgcacaaaaatgtgtataacca
caaaatgatgataagaacatcggaggaaaaatctttttgaaaaaaaacacaaggaaatatttttatttttgaacaaactg
aaacttttgaagatcaaatcaactgttaacaaagtacaaaagactaacgatctgagaaaacaatttcagattgattctagtatttc
tagaactttataagtttcaaatctgaaaatgttattatcatttcaattttgcccattttgttcaaaaatgttccatattctggaaaaaactta
aaaaaagattcaagatttcttgaactataaaattcctattcagctcaaccgtggatgcttattcgtatcgatacattacggaacattg
aagatgacacatttaaaaatgtaatgaacgcttcaaaattgcacaagaaaactgccatccaattgtgtggttggggaaaagactttg
cggccgctgtaagggtgagacacttttgttgaacgatgtttctcgaagaataacatttcaattttagttctccggaaaactcgtgttcaa
tcaatcaacggggtttgtattctcgacgggtttgaaaatattcgagatgatcgtctctcatcactattgggcattttaaattatcgagtt
ataattcattttttcagcgcaggtattgtttccccacgggtttttcagcattctgtgattttactacttttactaccattttgccaccaa
ataaaaaattacactttttactacgcagttttgtgtgtttgtaagtttgcaagatgctgctacgaattaaaaagattattatgattatatt
gaatcaaaaatgttctgtgtaaacgaaagagagacacagcaacaactggaaggttttcgggaagatttatggggagaaaagttt
ggaaaccggattggagagacaaatacacgcacccccgaacatacgtatctccacctaattcaattgagagaaaaaacattgtt
acctaaaaatagtagatgaaaatcaactagaacgcaactcaaaactcctggttcacagaaaaaacatgcctctacaatcaacg
caacacacaacgataaaatggtcagatgaactttttcagaaaaataatgtctttatgttttttcaataactgccccaaaaatactcgc
ctctttttctatcaattttttgctgggtgtctcaacaaaaattgtgaaccgaaaacgaatgtcaatcaagctttttctttaaactttcgggt
gtgtgctttcccaaaatgctattttccttgatgattcaaaaataagttgcccgtttccagaagggtggaagaaaaagcgggtgcctttttc
aattatcaactagagaacttgggaagtggcggagctgtgtagctcacttgcctcctgggaaggtagcagactatataatagtcagc
caattcattacctccctttcattaaaaataatctaaataattttttgttgatgatagataaatttttttagtattgttttactgactgtttgag
gtctgctcaaaaaacaacaaactgtttttctcattttgttaccttttcgaaatcgatcgtttattatcagttgtttttcagacactaacaaca
aatgaataactcaagtcctcctcgggattcaaacctactaccaaaactcaccgattcaagcactgatacatcactcagtggttaagtta

ctgtaacttttctcagataatttaaatgttctataaaatfaagatagcatgatgaatacaccaattccaagtatacatattcgccagcaaat
tatcatcatcttcatcatcaacaaaatcagaatcacaatcaaagtcagaatcataatcaagtgcaaaattatcaagatcatcaattgag
caacagatcaaggtaaattttaaataatagtttttgaaaactgttcaaatgttatttatcatcattacaattttgatcgattgtcgaaaa
aatagacaaaaaacacacaaaaattctacttctcttggcattttctgtgtattgtcatcgttcttcttctcgtcaaaaatattgttctt
ttgtcaatttttgagaaaaaatatgtaattccaattttgttcttcaaatgtgtgttcttctgaaaagagagacacagaagacagtaaatgtt
ttcacggtcatttctctatcacaacttaatcattttcactcaccgtttcttctcgtattttgtgtaagaaaaaatagaagaaagacaaa
aaagaagagaagactatttagaagaagaagaaggagaaaaagaagatcggaattggacggacattgtcgggtcgccaattgt
aaccgctccacacagtggccgcaatgttgttactgtgtattcccccatatcttttccattcaatcgttcttcttcttctcgtatatac
actgatataggggaatggaatgatttttccatccttgcgtcactttcgtcactttgttccaactattttattgttacgattttatgctgcct
ttttaaataccaaaagtttctcagattfaatttgaaggcaataataagaaaaaatctgtcgagctgcactttacacttttccggtcc
cccccaatttttcttgcacaaaaatgaacaattttatttttgaaaaaatggaactgtattgattctcgattcgacttttagttttttattgt
tggtagaaaattgatttttaggttaggtatgttaggtaacacttctctctcttcttcaattttctcttcatgttgattgtgctccggcc
gattggtcgagaatggggcgccgcaacacaagttgctggccactctactaccgtagtaataactgccaatcacggggcattgtctt
attcggctttttcgatttttctcgtatttcttctgaaaaaaaacattattctcaaaactctcctagtcattgtgtcaacaatgaaactct
cgttttttccaacacaaaaattctaccatatttgcatttgcacatccattacatcgtctccttctttagcacaccgttttttagcattggc
atttttatacgttttttttggagaaaagaaaggtgtgcattttccagctgtttttagaacggtattttgaattccatcaaaaatttttattgaatt
tgttagaaatttacaataattttactgaagattctgacacctttctaccctttttagagccatgaattcagaattttgaattaaaaattctcaag
ttcaacatttcaaaaataaaaaaaattgcagaatcatcaccaccaagggcgagccacacatcaactaccaccacaattc
gagccaacaaatagttcaaatcacgagcttatttgcataatccatcaacaacggagacaatacaagctccggttactgtcgctct
gctgctcccctccagctatcgctcatttaatgaaggaagttcagatcaaaagaggatttaacgaatattatggtaagttttcttttctcgt
accctataattttatttttattaaattattatataaaactgtatacaatctgaccttctcaccaccacaggaagaaagatctttatcgtcttttttct
ttccgcaacaaaaagaagatattcaattcattcctatacataatattgtattttagcgtcccaatccatcaatgaacgactatcgcgttg
aaaagattgccaatccggtggctgacctatattcaaatgagcaaccaatttataaccgattttgcaaatgctgaagtgaactttgttca
tttcttaacaatgtctataggggggagggggattcgacaatacacaatcattatcaaggcaacttctatcatcaatcactcttttttctaat
tgttaataagatgattgaagaatttgaatatggaaaaaacctgggtggaattgagaagccaagagatcaattttattggattgaa
aaaagagagtggtggatggttaaaaaagagaaaaattagaacttttaagccaaaattcgttatggttttagaaaactggaattaaa
aatagtgatttaagtgattatgacaagcagctaaattgatgatagagagcttttagcacttttcttctgaataacttcaaaactttcaaa
aaaaaactttcattgaataactcatgttccagaattttatgaacacatttctgagtaacaaatagaactatttcaaaattagagtagag
ccaactttttcagatggttcaaaaatcgaaaagtgatagttattttaaattttaaactctagttcacaattttgactgtaactgaaaacc
agagttccattatcacaacattgttctatctcaaaagtaaccctcaattttttagtccgatgctcaatcaacaagatgctaaacc
gatgaatttctccaccaactacatgggagccacacaatttctccaccaacagactgtgcaactcaattgtctagatctcagcggctctc
cacattcaactcgtgtgatccagctctaccattaatgcaccagtcaccttctcaacaaaattatgtgatgccacattcaactttacaccac
ctccacaagatccattggtcgtgaacaaaaccactgtcaaaaagcgaatggctgtaagtttttttttttgaaaaacgggtttatt
gattttctgttgacagaaaacagtgattcagaaaaacaagagttctaatttctcattttcaggccgtgcaatgtcatcaaaaattcaat
ttgctcaaaactgcaagacacgtgaaactacactttggcgacgaaatggggaaggaggtgttgagtcaagtaagttgttcaactcgaa
aaaaaaaattaacaaatttttgcagcgttgcaattgtatttccgcaaaaacaatcgaaaaaggccgtgtcattgagaaaagatg
gaataatgaaacgaaatcgtcgtccaagaaacgaatcaccaaatgggatcagaagacaagccacatgctaaactccccgtttccc
aaaaacaaaatattgctgatattcaaacagaatttgtttgtgatttttcttcttaaaaaagtttgcccgacatgtacagatgatttctc
atttatttttagtatctatagtcgttgctgacatttccgccccgaaaaatgtctggtgttttacagctcctcaaaaatgttttctattc
atagatcatcaaaatgccatttctgatcttcaaaaatactttttgtcatttcttaattaattgttttctgctcacctacttcaaaaattc
ccaaaaccattcccaagatgtttttctcccaattttgttacaatatttccatgactgcaaatatttttgtttgctgaaaaattgctattg
ttgtgattttactggtatgttttttccgttttccctaaaattgtttccagcattaaccatttttctgtcacataatttaacatatcaacataat
cccattaggcataaacatataattttccaaaatattgaaataaattgaaaactttgttcattttttgttttttctcgttgatcacaacaaaac
ggttgtatcaataagcgttttaacgatcttttctgttgcattttgttggatattgtgatcgggtcataaagtggtcaaacacaaaaatga
tagattatgggtgatatttccaaagattttgttgaagtttgaacacaaattgagagattttgctatcgtattcgatgaacgattttgattgat
tgaacagaaaagttcagggtagtggtgagataatgtttgaaactcgcgatgtatttctggttccggattctataggaaatttattcagac
ctattcctaacattgttattcacttttctgacataaatcaaatgaaacttatttataccaacaagaaataaatcccaagttgagcttct

gaaaaaactcggtttatgaacaaataaaaactcatgaggagatatgaaaaacccggagaaaatggtgagtgaaacatttcttcata
agaattctcgttaagttgagtgaaaattgaaaaataatgaaaaacttgggctccatcagatcagtcagattcttctgtatgattt
agttattatgtacaactaaaatcttaacggtattgttcaaatccatttctgactgtaattttttgacatgaacgaagaaaatttagataa
aattagagtccaattcaataattgtaaattttacataatgtcaaaaacctttaaattatgaaacacacttttttgcagaaaaccgtatttt
tttaactccaacacgcgagatatcgaataattgtgatgaggagtataattcctatttgaataacgcttccacccccctctctctctctc
tctatcaciaaattctctctcattctccacacttctcatctctctgtacaatctgtaacctaacacttttctctcataactcataagtttgtttct
cgtcatctaacgagtttctaactgtttgtcttattttatgatgcgatgatggttttatgaaaaagggtcgaaaaattcaatctctgtgaagctt
ctaaaaaaacttcaggattcttattctctcgatattttgaaactgccaagtgctctacttttctcaattagctcttccaaaaatgtaa
tattgcagattgccacaacaattttcagtgtaaaagttaaagttgatcgatgctcagcttggcgtaagttctcataatggtggaagat
tcaatccttacctaaatgatttctcctcaggcaacaacaactgtcacgaacaagacggttcggaaaaccgtccaatgaaagtttga
aaatggccacagtgaaacagattgggatactcgttcaattccgatgttctctgcatgtaagttgtgaataactacaaaaactaaca
tattttatagtaactaccggttcaaagaggggacggccgacgatccgattgttaaagtgatgactcagtgagtgataataaacataact
tataaggttattgaagtaaaacccccattaaaaataaaaaatcttattcactcattgtaaaaatgtagagaaatgtcaagaagtgct
gagaaacctctctttgtgagttttcggcatttctcgacacacctgaatatgatattttgttttg

Can-elt-5

join(3182..3683,3753..>3853,4391..>4654,6982..>7053,7108..7263)

ttatataatatacatattttctcgagctcattcattttcattattttcattactcatagccgctgggcatctttcgtgtttgttccaatcggctt
catcttttcatatcagttgggaaatttgaaaattaattatgaaaaattcaactctcaggcttagagaatttttaagcccgaaaatttct
atctaaagtttttattgggtgataagcctgaattttgcctaagttttgaaaacaagcctttatctgaattgggatcggacctgtttatcagga
agtctcatccaaaacaggcctaaataaataaggcttaacaaactaactagcctctaggcgtgatccttgacacctagaatgtctag
gcgcggtacttaataactaggctctcaagacgcggatcctgtcagaggggatctctagactcgggtcctagacaattaggttatctag
gctcgggggcttaacaaccggcttactagacttggctactagtcacgggagctctaaggttcatgagttaaaatttcaaatttttaa
cttctctgaactttattgagctccatgcaccccccccccaataatttcaaccgattttctccaaatcacatgaccttccataataaccta
attgtcgtcgccacaaaaactcccacaaagagcctcaacaattgtgtgtcgatttttaacaaaacgtgaacaatagtcgcctggggtt
acggctgatagaatatttaagagtggtggccagagcgggcacccattattatctcgaggttcttctcgtctgccagcatccgggtt
tgcttttctgtttcatgctctcgaagaaaagggtttgttggtgcagaaaattttatctatgacatagaacacaaatgcgctccaac
gagaaagataatttccagtgaaattcaaaaaatcattttttttgttctctacacctctcctctctcatcagattgcatttactaagaaa
tgtgtgaagactaaaaacaacatcacaaaaggcgggaagatgagattggcagggttaagggtgtaaaaaacgaacagattgtg
gatacttattgttagttattattgattggggattttctgtatgttcgtaatttgggaagattagtgggcaagggttagccaatcattgtcttt
tcatcatttattcacatcattttattatgtttggttagacatcattttctgcatttttaactglatttttctgtagcttttaagaaaattgaagca
tctgaaaaacagcggcctgagtgagcagtggttctgtgtggcgcgcaaggcgcgagttcgatccccgacctcaaaactt
tttcttccatcattttcgcctatcctctatcctatcgacaatctaatctcatcacactcaccattcacattcacgatatttttctgacagtaatt
cctgtcatataagatgcggattatctctctctcgttattttcgcgcaggtgtgatattatgataatgagagcgttggaggatttacgag
gagaaaattgcatttttagggggcctatttggttacgaccatctagatattgttgggacaagttcagaggtatttggagaaaacttgaat
agaagatcaggattttgaaaattcaatttttagttctcaaaaaattcaggaaaactctctgatgcaagttatttttttgaatttttaa
acaaaaatttaacattcagtgatagatatttcaaccctctgtaaattccactcaaaaaatcctcataacatttcacggcctcaattcga
taacaatcattttggtgattcctcctcgaatcgggtgcataaaaacagaagaaaagaaaggctatgttgaacacgcggtttat
aggcgaagagattgatattagataactcgtttttgctcccttgcgcacagatagatcgtaactcctccgaccttttagcgatttga
atcgatagaagattgctatctcacacacaacataactttttgttggaggagacaacacaaaacgacctcttttgattttaatttatt
atattaccgccccttagatattctgagataagccagaagaatcttcatctcttatgaagatgaagcttttatttactatttcacattataata
atacaagttcatttctctcccgaacaccgcataattcgaaaagggcggagctcgcgaattcgcatttcgaaatcggaattgtcatggg
cggcgttatctgcaggccccagccacttactctttttctgctgatagatatttttgggtgtcgttaggcacacgggattttattatta
tttctcccctcgaatcttacggttagttattatgaatggatgagtgaaatggatatttttgggggagaagaagttactatggtgaatgtat
ggcaatagttgattttgattttatcgttttctggtttccgaggaaaaatcatttgaattttgtaagaagtaaaaaataaaaaatttcaaaccgc
aaaaatgcattgatcgtcgcgagacacctcgccaaatcttgtgtccttaacaaaaataaccgtactctatcgaaaaaatatttttattttc

tgctttctcaccttcccgtcgcggtgtcaacacaatttccaccctcgccagagagtgtataaacataaacctatcagattacgtccttct
gctcgccaaggaccaccccccttttataccaccacccaaaaatgattaacattgccagggtgggtggagctcgaccccgccacaattg
ccttctcccttctcattgttctctctccttacatgtctgtttgtgtgtctgtcttgcctctatcttcttaatttctattcatatcttgagctc
tcatcaaatgaagcttctgcttcatccatttctcccttcttttctccatttttcttttttaatatcccacgcggatttctgccataaatcca
tctttcatttttttttggctcgttctattcaaatcgattccagggatgacacaaatcgagtcacatcaccagcttcacaatgtgcagcga
catcgccgattcctgtcgaagatccgcccgtgaaactcccgaattaacagcagcaccttgcgcaggttgcgtacaattgcaccacga
aatcaagcagaacgtgcaacaaatgatggataaattcgattgatgatagagacttgagagttttatcagtataaagagaaggatc
gcatgtcagagattggaagtgggaaaaagatgcgccatccatcaggaagtcgaagctcgccaaatctgcaaaatggaactgg
aaaagggtggagccggtcgcggaagcgaacccaacaaagaatcgattaatcggttggcgcacttctgaagccgcgcagaatt
cggaaaaatttctgaatggattatcagatgagaaacgacagatctcaacaccagtctcggctagttcaccatttccagatttaacaattt
gcaaacggattatgtgagtttttaggttacatcctagctcccctggattatttttactgatatttttattgttccagtcgatccaatggct
caccaacaacaaatgatgaatattctggcgtggtccaacaacaaggaccgctgaaaaatgctgctggaactccagccaaac
aagtgaacaggagaaagaggaaatattcattagacaaccgaaaaatcgaaatagcgaagagcaaccatcgcaaatgattatgg
aacaattgacggcgcatttgaatgggtaagaattggggtctagagtcgaagacctaagtgaaggccctaaattttgaataacca
atatatctggctgaataaatctcaccttataatctttaacacagcccgcctctcccaacaagaacatttttctgcgcaaaaaagt
tatgtgacctctattctaacacatttattcttttttggatagatgtttcacctgccgcccgtcttttttggttgtagtttgcgaaattatcg
cgcaaaaaagtttgggtgatagggaaattgaaagtttgggggttaaaagggtgagtcgagataaaaattgcattttgcattttctca
agccattttacacgggttttactgttttctcaccttacgtaatttaaaaaatcatcccaaatgttttttccagaaactccaagaaacca
acaaccaacatcagccacagccaacatcaaaacatcaccatcgcaagcttctcccgcgccagccaccacaccatccaccaaca
ttcagcagccaacaatgccgctcgaataatgatgaagatgagttgagtcgctgctgagtcgaattgtatgacgaccaaaa
cgacagctggcgacgcgattgacgggaaaattggtgtgcaacgcgtgcggattatattatcgattacatcggggtgagctttttgaaa
tttttgggagaatcggggttttggatgaaatggtggataaataaggattttccggtacaaatttaaaatcataaatttcaaatctcaa
aacatataatttctggcgcctacatatttcaaaaaagataattatttaggcagcagctgattggttttctgcctcgtcttttttgcgaa
aaaaaaaggctgcttcgactaattatcgaatgaatagggttttccggaggtaaaaatgtatgtcaaggttttaactacctagcctaga
catcaaaaaatagccattaacaaaaacctgggcagctgatagatatagggtctctatttgtcacctgttcccccatccaatctac
cgtatttataccgctcaatgataattactaccttttcccttttgcagtcgaatcacaacagctctcattcttttctgtctatataga
gaaagagagataattagtgtggtcggaggcggcggtaagaagaaaatgattaccatcggggtgaaatggatggatgatattga
attgtgaaaaggggagcaattagtgaagatgactgagtgacacccgaacagaagaaaaggtagaaaaggaaaacaatatgaa
taagaaaagaaaagaaatgatgaagatgacgatgactaccgacagatgaacaatgaaacacctgcaccaggtggacg
gggggaactctatggaaggaaaagaaaagtgatggataaaagggtccccggaaattgtcagggttcagagaatctggaggc
gtcagacaagccagagtttgaatttcaaaaaaaaatcaaaagggttttaggcgatgttacttgagaagtaggttctctagacacgg
gtacttgacaattagaatttaaggcgcgttcttccagtttaagctcttaggagacactacttgaatatcagctgtatagacgcgagt
cctatacagatttaggttctaggcgttctcctgactcaagaatttctaggcttgcctgcttgacatggaagctttaaaggctctgatcctgt
cagggctgatttagggccgccccttagattagcaaaaccttataaaatttgaatttgatttcaaaaattaaaaaaattgtatctcc
caccagacttctgaactttccacactcccagcccaagttactctgactctacctcttctattgttgattgacctcaattattgtattttctc
gatgtaataacaacaccgataattgaacctaaagatcgaaccgaacatgatgatcactccggccgcccgccttactcaagttctttt
cccactaattaccgaaatacaaaagggtggtacaacctgaggcgaatcgtgctaatttactttttagcacttttgaatatgattcagatgc
ggtcattttcttttccaagatactgtagatattatataaccgacggaacaatagaataggtaggttaggttagaaaataaaacgcaa
agataattagaggacggtgtttgcaattgagacgaagaagaagacagtggttggaaacgttctattatataacaacagagg
gttccgcaggcagcggatattgaactcgacaccttgacttgacagtgctactgttgcactgtgccatttaaccactttatataccaaaa
accatgattttatcgtttgtctgtttgacacggttgttagcagctgtctttgtgacatccaatgacctcatattcacaagatgacaactaaga
taagcaggttagtagttacaagaaaaggaaggaaagagatgagtagaacgaaccaattatagtagtattagttgaagaggggtgt
attaacgatgatgattgactagggccgggtttggggagggcacgcgtgcgcacgagattataagatacggtagataattgggca
ggtgaagaaaaggaaaatgatgatgatgatgaagaagaaaaaatgtttggtgacgaccaaaaaattgaggattgatggggat
tttaggcataaaaaatctgaaaattagggcacaaaactctagctaaattttgacctgaaaaccgtaaaattttagggttaattttggttcta
aatatcccaaaatttactcaaaattgagctgaaacatcttaaaattgtttattcaaaaagctcaaaactataaaatcttctactaaaaa
attcctaccaatttttcaattttttgcagactcatcgacctgtcatatgcgcaaaagatttcaacaaagattccgcccgaaaa

cgattcgggtgcccgtatgttcatgggaaaacgacgtaccgaaatgccaccacatttgttcgcccgtctctgacgaagcctacagaaaca
tgttgcaaaacatgaaaatcaatccatgttgattaccggagaatctggagccggaagactgaaaacaccaagaaggttatttcta
cttcgcccgcggtgctcaacaagaaacttccggtggaagaaggctgatgctgatccaaatgtcaagaaagtcactttggaa
gatcaaatcgttcaaaccaatccagtttggagcttccgtaacgccaagactgttcgtaacaacaattcatcgcttccggttaaattcat
ccgtattcatttctcgaacaaggacgtgtcgttcttgcgatattgaacattatctttggaaaaatctcgtgttatccgtcaagctccagga
gagcgttgttatcacatttctaccaaatcttctccgattccaacaaaattgaaggaagagcttctcctcaacaaccagtcгааagatt
actggttcattgtcaagctgaattgattattgatggaatcaacgatactgtaagtgaacacctttagaaaatcttctgtgattttaaataca
atatgaaatgtattcaggaagaacatcaattgaccgatgaagcttccgacattctcaagttctaccaagagaaaagaaggaatgta
tcaattgctgctgtatgatgcacatgggtaacatgaaattcaacaacgtccacgtgaagaacaagctgaaccagatggtaccga
tgtaagttatttcatattcagttggagaatataaaaaatttctatgatttcgaattttacaaccgataagtggttcattgttgactttgctg
gtgggacagatcttttctgttttcttttctgttttctcggaaaaaatcttcttttttctctatcccaaagtaaatattactatatcaacagg
gataagataactaactacgtttatcccacaaaaattgattttgataaaacatagacaatcgagaagattgaaaatcaaatcatgttatt
acagatgctgacagagccgccaagaactacggaattgacaccgatgaattctgaaggcttgactcgtccaagagtaaaggctcgg
agccgaatgggtcaacaagggacaaaattggaacaagtcaactgggctatcggagctatggctaaaggctttattcaagaatctc
aactggctcgtcaagaaatgaacaaactcttgatcaaaaaggatctcccgtgatcacttcattggtgctctgatattgctggtttcga
aatcttctgatgaagaatcataatttcaaaaaatttataattttgtaatttttctcagttcaactcttgaacaattgtggatcaactttgcaa
tgaaaaactcaacaattctcaaccatcacatgttcgttttggacaagaagaatcgcctcgtgaaggaattcaatgggtttcattgatt
cggcttgattgcaagctgtattgagctcattgagaaggtaacaattataaaatttatgaaatatctctaatttggttcagccacttgga
tcattgctatgctcgatgaagaatgtattgtccaaaagccagtgaccaaactttggctcaaaaactcatcgaccaacatctggcaaac
atccaaactcgaaaaagccaaaaccaccaaagggaacaagccgaagctcacttcgcatcggcattatgctggttacagttcgt
tacaatgttatgaaactggctgaaaagaacaaggatcctctcaatgacaccgtgtcaccgctatgaaagcatcaaaggctcaatgctctt
ctcaacgaagtctggcaagattacaccaccaagaagaagccgcccgtcggcaaaaaggagctgctggtggaagaagaagg
aaaatctggatcattcatgactgtttctatgctctacagagaatcattgaacaaattgatgacctgttgaactcaactcatccacatttcat
ccgttctatcattccaaatgaaaagaaggcctctggagttattgacgcttcttgggttctcaatcaattgacatgtaatggtgcttgggaagg
aattcgtattgtagaaggattccctaacagaactctcatccagattttgtcaacggatgctattttggctgctgatgaatcactcatc
ggaaaaactgatgccaagaaaggatcagctgatattggctcgtttggtagagaaaagaaattggaagaagataactccggttg
gttgaccaaaagtttctcaaggctggtattgttgcaccattggaagatttgcgtgataccactcttgtagacttattactggtctcaagctc
aatgcagatggtacttccaaattgtgagtttttatttatttataaatcaatcaattaattgaaatgttctagatcgagaagaacgctctg
ccgaaaaagccgaagcttcaaaagttatccaaagaaacatccgagctggggagcattgcgacactggctggttgcagactttacg
gaaaagtcaagccactcgtcaactctggaaagattgaggtcaatattgagaagctacaagagactgttgccacactcaaggacacc
ttggtgcaagaagaggagaagaacgtaactccaagaggagctgaacgtctcacaaggagaccgagctcttggctcaa
ttggaagctagcaagggaagcactcgtgaagttgaggagcgtatgctgcatgaatgagcaaaaggttctctcgaaggaaaattg
gctgatgccaacaagaattggaagttgagaagctcgcctctgaaatcaacaagcaaaaagaaactgttgaagccgaatgtgct
gaattgaaaaagagctgtcaagatgttgatctttcattgagaaggttgaagccgagaagaacgccaaggaacatcaaatccgctgct
ctcaagatgaaatgctcaagctgatgaaaacatctcaaaattgaacaaagagagaagaatcaagaagaaccaacaagaa
attgagcgaagacttgcaagctgctgaagagcaaaaacttggctgccaacaaattgaaggccaaactcatgcaatcgttgaagattc
tgaacaaacccaagagcgtgagaagagaaaaccgctgatattggacaagccaagagaaaggctgaaggagagctcaagatt
gctcaagaaacttggagagttgaacaaatcaagagcgtatgctgaaaatgctttgagacgcaaggaaaccgaattgcacaattt
gggaatgaaattggaagacgaacaagccgcccgttccaaactcaaaagggaattcaacaagatgaagccgctatgaaggatctc
aagatcaattggctgatgagaagatgctcgtcaacgtgctgatagatcaagagctgaacaacaagctgaattcgtatgagctcaatg
agcaactcgaagatcaaatccgctgactgctcaagttgaacttgaaaagaagaaggatgctgaactcggcaaacctccgctgct
gatttggagaagctggacttaaattcggagagcaactcaccgtttgaaagaagaagggaactgatgctatccaagaattgggagac
caagtgaacaattgcaaaagcaaaagaaccgcatgaaaaagagaaggctcaaatgcaacgcaatttgatgaatcatcagct
gctcttgatcaagaagctaaaggctcgtgctgaccaagaagagttgccaagggacatgaagtcagacttctgaactcgtcttaagg
ctgacgaacaatctcgtcaattgcaagacttctttcatcaaggagcgtttgaaactctgacaactctgatcttctcgtcaagctgaaga
attggaagccaagattcaaggagctaacccgctcaactcaattctcaacgaattggatcacgctaagagatcagctgaagagga
aagccgtgaacgtcaaaactctcgaactgtccaagaactggctcgtgaactgaacaactcaaggaatcaatcgaagacgaagt

tgccgaaagaacgaagctactcgtcaactccaaaaagccaccgctgaactcgaacaatggagaaccaaatcgagaccgaag
gactattggagccgatgaattgatgaggcaagaaacgtcaaaaccaaagactccgaaattcaagatgctttggatgcatgtaac
gccaagattgttgccttgagaatgctcgtagtcgcttgacaactgaagctgatgccaacagactgaagctgaacatcacgctcaagc
tgttcctcttggagaagaacaaaaagcttcgacaaagtcacgatgactggaagaagaaggtgatgaccttacctcgaattgga
cggatctcaagagatgctcgtcaactcaccggtgaagctcacaactccggtggacaacacgatactttggctgatcaagtcgaagg
actccgctcgcgaaaacaaatcgttgagcgtgaagttcgtgacctggagaacaactctctgaaggaggacgtgccactcacgctttg
tccaagaatcctcgtcgtttgaaatggagaaggaagaactcaacgtggactcgtgaagctgaagctgctcttgaatccgaagaa
agcaaggctcctcgttgcataatgaagctctcaaatccgcgccgaaatcgaaaagagaatcgccgagaaggaagaggaattcg
aaaaccaccgcaaggtcatcaacaaccatcgacagcattcaagccactttggactccgagaccaaggccaaatccgaactttc
cgtgtcaagaagaagttggagaccgacatcaacgaattggagatcgccctgacctgcaaccgtgcaacgaagacgccc
aagaatacagggtttgacaggctttctcgggtgatcattttattttcattattttcagacgttatttggaccaaatccgcgagttgcaaca
aacggtgatgacgaacaaaaacgtcgtgaagaattccgtgagcatttggccgctgagagaaaactcgtgttgccaaacaaga
acaagaagaactcatcgttaactcgaagctgtaagaacttttgaatgactttcaaatcaaatctaatttccagatcgagagagctc
gccgtgttgaagctcagtcaggagcatcaagagcaaaacaacgagctcaacgctcaaaacgttgctacgctgccgccaag
agtcaactcgacaacgaaatgcactcctcaagagcgtatcgtgaagctcatgctgaattgtccgctccgaagaccgtggacgctc
gcgctgctgccgatgccgccaagtgagttgtttactcacagtaaccggtatcatcattttttccaggctcgtgaagatctccgccacg
agcaagagcaatctcaacaactcgaagattcaagaacaactcgagagctccgtaaggtaaacagataagccctaactttatct
ctcaactttttgtgtattacaggatctcaagagcgcgctgacgctgccgaagctgagggtgatgaagggaggagccaaggctatccaa
aaggccgaacaacgcctcaagctcttcaaacgatttggaaaccgaaaccgcccgcgctggagaagctaccaaaacattggctc
gcgctgaccgcaaggctcgcgaattcgaattccaagttctgaagacaagaagaattatgataaattgcaagaattagcgaaaaact
caccgccaactcaaacccaaaagaaacaactgatgaagccgtaagtttacttattttcttgattgattcgaataacaattgtgga
attttttaggaagaacaagccaacaaccatttgagcaataaccgatccggtcaattgtccttgaaaccgctgaagaaagagccgattc
cgctgaacaatgcctcgtccgaatccgaagtcgaacgcgccaacaacgagcaaaagtagatatttccgtactttcataatcccctc
ccccttctccccacataattttgtcgtcgtccctcatacaaaagcaaatgtcctccccacattttatccccaccataaacgtgtc
ggttgaaataagtcattctctgatttctaaataaaaaaccactttcaaaaaaaatgataatgaatcccccattttaggtgtagtattc
tctgttggacaaatgtcctctgattattgattgattgaagtaataaaaagcatcatctggcttccaagtgtgttattttatgcatc
a

Can-pop-1

partial coding DNA sequence: join(3134..3701,3756..3905)

ctctatttcatgccatttttggatgctcgtagatagctgctgggtgtgtctctttctctattcgtcttcttattttctgttctgtttttgaa
tattttattttattttcatttacctgttctcataaatttaataataggcttttggttcatataggtagtaattagaattgtttgaaatataact
attattagcgaatgtgacgttttcggctcacccttgggtgaaaataaataaagagaaatttttggcgcgaagaatgtcaggtgg
cgttttatgagaagaagcaacattttgtcgtcagatatttataaacacacacaacatttaataacattttgaaatgaaaaaacttttt
atttcattttttgttataaaaaataaacaataattttgaaaacatttttgaaacagttcgtcgcgagactcaaacgagtgatgtg
gctccttaaaataccctactgtcattttatttttttttgcaaaatcgaattccaccatatttcgcagaatttcgagagatttcaagac
taacgtttcagaaaaatctaaaactcatctttcgtaaaacattctattttgacctacatctcctctacaacctattttcatccagttttt
ttctcgttcttttctattttttctgttctcattgattcatttttccctcattcgaacgtacgttatcagctctcaaacggtcagttttttcc
ataaattatataatggtttcattttcgccttcacttctcctgtttctatttttatgacgcctccccaccgccaatgacacccaaa
aacctgttactttttgggtggctgttctggcgtctttttcgggtgggaaagtgtgtgtgttttctaggtcgcctgtgtttgttctatctt
attttgaaactattttattactcatgccggttttcatctgattttgattaaatgattgaaattaagtcaattttgcaggccttaaacacaaa
aaaataaatgcaataatgatggccgacgatgaaaatgggtgatgaggtgaaggtgttttagacgtggagaagatgtggatgatgataca
atgatcgggagaacatccgaacaacaattagctgatgataaaaaagaagcagttttagaagcagagttagaagttggaagttgtttt
tggggtttggagaaaaattgggagaatttggagcttctgaatcggtatcagagtagcctaattttgtgcacatcgggcttttttgaattt
cgaaaacaattctgactcagctcattcttgcgaatttgcataaaatgcaaaatcgttcaacaaaatgaaattttcaaaagaga
agcataatgtaacctgacacctcggctgaggtcgcggtttcaaaatgaaattttacttaaacgtttaagaccgttagaacctgcctag

atagtctatttctcaagaagccaggcctgaaaagcttttttaacttgaatgtatccatcctgattctggtagcttttctcggaaatttattca
aaaattctacagtaaccctcatctctccattcccattagctttttctcttgccatctccaaaaataaaataacaaattaccacaaaaaat
gtattttacattaacctaattaattgccaatcttaacttttcttcgcaccttcttcccaatcaaaaaaaaaaataacgagccac
atgtcaaaaaatattacaattttgcccgtatccaataaaaaataaataagaaaaagttttgtggagttcaagagcggaaaattgag
caatttctattactaaccagacatgtacgaaaagagataattataaaaaattgcgcaactttttctactgtataactactactgtttgtaac
cgaggattaaaaaaagaggagacatatggaattgaatcaagatttctgttttcagggttcaaaatcaggaacaagcgttcatcaaac
ccgaaccttctccatctttgccagtttagcaggtttaattgccaggaggccattcagtcaggatagcttttccaatgtttatgccgcttatt
atggtgagttctttttcgaaaaattcaaaaaatacaacaatttctttgtcttcaaaatggaatagtcgggtccggaagcaattagc
accacccattcattggctctctttgtctttcttcgacgacacacccttgacactttgtttttgaaaaaacatgacaaaaaggggaatt
gtatcggtaacattttgggggagaaagagacagtaattacgattcgcagacataattgagtaggagaaaacggagcaagac
ctacatttttggggcgagagagaaaaagaacaataattggatgatgatgatttttgagaatttgagagaggggggttcaaattatc
gtagaaacttggaatggtttgaggggagaatttgaaccctgattttcagccaaatataatagagataattttcagcttctattcttga
acacaaaatcaagctcttaatcgtcatagagctattcttgacgtaaccttttctcgtcaagtttaaaatcaaaattcatttctcaaaa
ctcgtgaaaatctttctgatcactgatcatcaaaatcataacacaaatagggcgaaagaatgattcaagtcgaaaaggatgagttgc
tcagctcaattgcaatcagcaccacaaacaatagcattcttcgcagatgctcttgcaaatccgtgtctagataatatacatagattcgt
gtaaataaacagagattactgtagggcgtaattgttaagcaaatataatgggagataaccaatgggagattggaagaagaaaaa
gatattatgtaattgggaattttgaattcagctcgggcataacctcattcagaaatctgtaaaaatctgtttatcctcaacagcctcttatttc
agcctcaatatggattcagagccggactttcaccgaattttgttctcccaatgcaagctggtctttcaccttcatttaatatgtttcaacatct
ccattttatggtgctcaatggctgcagttgtaacaacatatggaaaatgcagttccattagcagcaagatgagaggaacaccatt
gaatccgttgaatcaaatgagaatgccaccgtatcctaaatccaggaaatggacattacatcaaaaaagaaagaggacatggcggag
gtgaaaaatcaaaaaagatgatcatatacaaaaaaccattgaatgatttatgtggtttatgaaagagaatcggaaaaaattgctgga
tgaaattgaaataatgagaacaatcggtgaattgaacaagaatgggcaaaagatggcatgatttaccacaaagaagaacag
caaaaaatattttgaattggcgaaaaaagatcgagaagatcataacaaaaaatatccacaatggtcggctcgtgaaaaattatgcagtta
ataagaagaataagaaaaagaggaggataagagtattagtaagttgtttttgttagaaaaatgaaaatataattgtattttgtagttcag
tttcggagaatggtgatcagaagaatgctgagccagattggtgtgataatcaagaaatggtgtgaaattctgtaagagaaagaa
gaagtgcgaatattcagagtatagaaatacagatacaatgatgatgatttacaagatagaggaaggaaattttgaaaaattttgtggg
attcaagaaatggactgggcattttgtggatttttaggttagagaatcaaaataaagatgtttccgaatatttttaaacccgaaaattcgg
atttttgaaatgttaagactttgaaaatccacgttgctaagttttgaaaattattgtgtgaaaaatcaacataccaaagtttctagatcttt
ttaattcaaaaaaattgaaaaattgttgactgaaaaatcctcaaaatgaaatgctttccgaattttacatctcacgaagttcacctgatct
tgaaatgtccccatttctattaattttgaaatccaacattttcatttaacatactttcaggatcactggccatctccattagcctctccata
ggctgatcaccatgggtgcaaatgctctgattcagaatctgatgtcgaagatgaagatgtcgtaccaacaatttcacaacaagcaa
gagaagtgattatgcaagaatcactatgtactttataagaaaatctcgaagaaaacaatcaataatcagttcaaatccgggtgtttttca
cttctcctcaatttttcaattttcatttataatacaaaatatttattcttttcaccttctctataacctttttgtcaccaatttcgctgaattgaa
acaggtgctccaatttctctctttttttgattttttctgatttcacactatctttttggttttttagggatctgtgagtttaggtaataaaat
gaatgaccaagaaattgtgttctttttgtatataatagttgcgggtctttttggaccacaatctctttttgtctttttgatgatcttttctctat
ttatattatgatgaaaatttttttttaattcagaagatgatttgtagacaattattatgcaaaaatttttgccattaaagttttcaaaata
aatttttagacgccccaaaaatctacaataatctggattagattcaaacattttttatttcgaaaatcagccagaaaaaattgaaatta

Can-skn-1

partial coding DNA sequence:

join(2362..2763,4598..>4928,5401..>5544,5941..>6205,6774..>6863,6945..7296)

agtagattttcagaaatgaaataattagattttatttcttacgttcaaacgtgaccatttttatctttcgaaaaaatctgaaattaatttattct
tattttcatcaattcgaatttctcgattttctaaaatgccaatcaaaaagatcaattctgtgagttcaatatcgtaatttcacgataaaaaacta
ttaattctcgaatttctgagcattttctgcgtacactgtcccttatcgcctcgtgattttatcgaaaaaatcaataatctggcgccattttcct
cgcaatttcattttcaatttcgaattctatctttttctcaaaattctgtcatgtttacccccgacctttttgtagataattttgccccaaaaat
ccgtttttcttttaaaaaaacgatgtaaacacacatttttgcgcagcaaacatcaattttgttcgttctttttgttctgtatctttttcgctatt

ctctcaatTTTTctctgtcacagaccacgaattgccgcaactctgTTTTcatctgctctccatctgatttctcgccgggtcaaaatttc
cctctTTTTccaactTTTTctatttctatttctatttctcatctTTTTcctgagccaggTTTTccagaaaaaaacaatttctcacggctgc
tatggagattTTTTattgattgtgcaatttatttctgataacctgaattaaattttaagtTTTTgttttagagaaacaaaaataaattagta
aaaatcttggccaagttcatttaattgTTTTctccgctctctgatttctagTTTTgtctggtgcccttcttatcaggacaagtatggtt
ttggcaaaatgcttatcgTTTTgaaataaatttctgggttctcgatttcaatgatcttaattcttgagttggaatttctccgctctcggttc
cccacaatctctaacttctgatttctgattgagtgagtttcaacgcaaatgcaatttctgctctctgccttaaatatcttggctgct
agatattcaaaatagaagtgcagtagagcaacttgaaaattcgagaaaaactgtatgctatctcccgttctTTTTctccacttat
ctttatctaccgttctctgTTTTggatgatgcaaattgtctgttactaatgagaaaagtgcaaacacgctccaatcacaatttctgTTTT
ctgctctctctcaccttctccatttccacgttggatctatgaaaaagagcttatcaaatgttgaaaaaaagccttccatacaaatagat
aactTTTTaaaatttccatataaacctgTTTTctcgggcaacacaattaatttctgacaaaagtcacgttctgtaacgaaagaccgt
attgatgatgatgacggatagctatttctctctTTTTctctTTTTctctgtagtactttgtagaatgacagacacacattgaga
aaatagcttccacaattgtcttctctcaaaaaacatatattgTTTTgatcagactagactctagTTTTatttctcagcaatctctatct
ggctcgctgTTTTctcgccattcgtcacccaaccagaattcgcacatttggcggaacgagcgatttggagcgaagtgtgatcggattg
cggaaattacggaaagaggtatatttggatttgaaaatttatgatttggatgaagaacagtatttgacaataaataaattattgct
taaataatttcataagttatttctcgaagagttcaaaaattttaaatttcagttctcagacttctgaaaaatttaagatatttggtaattg
agaagtgtcatgctgctcatttctcgaacaaaaacaatgttctatattatctcattgaacttcaaaagttctgtgTTTTagccaagttagg
gatttataagcctaaatctaggcctaactcagaacagaatgtagtcatcaaaccctaaattgagcctcgaaaattttagttctctg
aaattcaaaaaatcacgttatcatccaactatacgaatttctgaaaaaccaattaatagtgcaaaatttctccaacctgccc
aaaataaaaaaataaattactatgatcacatgcactttaattcacctccaactcagaaaaacaggaatccttgggaatgat
TTTTgagcacacaaaatgttctcgaatcaataatcaggaaggatattcggattatcaacaaaatccaaatcaatattcaaatgatc
ccaaaatgacgccaggttctatcgtccaatgggaattcgttggagagatgacaaagttgatgcaagttcaaaactatgccaatttaac
tgaacacagatcagcctcgccatttgaacaagaagatcaaaatcaccatcaagaccaaccctcgaatcgttggatacatattcat
atgattcgccatttggaaagatgctgatttattgattgatttattggagaagtgatattcggattgaaaaaggtgttagacaagttgaccgg
ctgaacaatatgaaagagattgcaaatgtgactgagaaatcaactactgtaggTTTTcaaaagttggatttggggttaaaaat
gatattgggtattgaaaaattatccattcaacaaaaatcaaggcataggcaattcgcacacaaaaattgtggcaacatttctctac
atccataatcgaaccaagttcctggttcttgatgaaaagccatataaacacaatcgaccaatggctcatttgggtgagtcgaatccca
attcaaaatcagctgttccatcggaccattttagactgatttgtcatttagcttattcaaccaatccaaatgttTTTTctgtaa
gaaattcgaaaattgcatgagaatggccaaagttcgaacaatttgtcgaattgggctaatttggaaaagcgggattatag
aaattcaacgatcaaaatgagctctaaacaaccaatattttaaataaaaaccgttccaaacaaaaattggtcctTTTTcctgtgt
caaatTTTTtaaccaacttctcgaatttgaataaataagatttctgattcatcttgatactcgccaaatgtctcccatactctaca
aagtttctgctggaatccacatcaaatcaactcgaacagttgtaccaatggtctctacatttggcaaccctgcaaaaaatgttctctt
ttgatttctggatttggatcataaatgacttctcatcattggatgatttaccgaaatgccgaaggatgatttcaattaggatgtttga
actattgaaagtgatgatactctctcagaagctcaaccaattactaaaattaggagttatgagtagtcaaaatcacgagacctct
ccagagacaatctatactTTTTcaagttctcacgtaatcttcatcggacaaagaactccacaaaaagcattgtattttatcagtttta
ttcgaaaaatgatgctatcttctgattgaactattgtaaaggaaaaagtcgtaaagtctgatggagaaaaatgaggaaaaata
atattgagcatttgggtcaacgccttctgataaaaaaaagtaacatgctcagaaaaaggattatacacagtgaatagattcagag
attggactgtttaaaggctacgatgggactgaaaaaggattggagctagaatcgggatcggaaatcttctaaactctgtaaactt
gggggagaatcgcggaatttctctgatttctatagatgatttctTTTTgatttgaactcgccatatacaaacggttatcctaagattg
atcttctgatgactcgacgaatgatttctcattcgaccatcaagctcttatttctataaaactcggcttagttgagcctaaccttcaagc
ctacaattggaatgttctcatgtttagtatttatttctcatccaatcgaaaaatcagtgctatttctatttctatttctgcctatatt
cccatttctaccaaccaacttcttaacttacatttgttgaatgtaataactgtaataatcgaacattcatatcgagatttattgctg
agttctcgtgattgaaactggcacatctttagaggcgatggtatcactactgaatagattcttgaatcaacagtaaaaatgttagaaa
cagtttcatgatttggtagaacaactaatttctcgaaggcgccaaactttagggaaagtatcagatttggaaaaaattataaa
caatttataatttccagggttgacagctgaagagcatcaaatgagatttctcgaagggaatttcaagatttctccaagtttgc
atctcacaataaacaacaataaattatcaaaataccacaataataattgcaaatgaaaacattgaaaaatcgagttgaccaattc
caagcgatgaagattggctgatttgaagatgttcaaaagaagaatcacaattgaattggatttattgatcaacaaaatattgtgca
gacacaacaatcacagcagccaatttgcaaaatgttctcattgagcggagggaattgttattcgaacaaatgtgagttggattttaa

aaagatatctgaaacatttccgaaattgtaaactaaaattcaagcccccaaatattcttcaaccaaattaatagattcaaaaattttcc
taagacctgagaatcataaagtaattccactaatgagatctgtcactgtgaatagttacattattagaatcttttctcgaacatcattttg
tgctacaatttgcctcttctatcttcccacctcataagcctcataataatcatcgcccaaaggcttcccacttttctcttttaaaaacag
cacgttccgttcatcttctgattcctgatatacgattatcagttacgaaaatgcacagtttccgactgaacgataaaaactttttcgttca
acgtcactttttgtcatcatcaaaaatcttatttttgggtttccctttttatttctgtttacagtaaccgaaatgagcatgttacgaagt
gatgaattggcaccactgctccaatgaagattgcaagctgagacgttttcaatcgactgattcgaatacaatgcaacaatattgat
gccggctgaagctgaacctgtgatggtatgttcaagattgaatagtttttaattgtccgattcaaacagccgaaaaattagatcatctg
gtccattcaaaaatcaaaaacgcccgcatttttgcctaaaagttagctgacctgagatcaaacctataattatcgctttatccgagct
ccgcccatttcagctctaaatttaattagctccgcccatttttgcgacactgacacatctcctcaagggtttgtgtataaaaaggagt
gtactatagtgaagacacacacttctaagctgagcttctcgcgaactccaactgaatctcaaaaatgaactattcaacactcc
ctatgattttcggcgcttttccaactccaccaactggattttcagcttcccaccatcgcaattctctataattccaatgatcaacgaca
ctcgcacgaacaagttcgaatggaaatgttattttgatcatagatattcgagaattccaccaaccgcaacagcaacagcaccaac
aagaccagtaatcatgatcaactggagctgcgattcaagtcattgggtggagctgcaagaaatggaacaacactttcaagtcca
cttttgatccatattcgtatgagacaatcgtttctgatgtgaagtttttttaaaattaaccaagggtcccagaaaaataggcaaaaa
caagagatacaatattttctagaaatcttctgatctacccaaaaatattctagtttgactattccatttgaattcgtgactaaactagac
agaaatcatccatgttttctcctcaatgtcatcttttgcgaaatcgtttcattttaattttcacatctacttagatattgctagctcgata
ttttcagccacttgaagagaaaagccgacggcctagaaaaccaaatttttcttcaatacaaaaatcagagcgctctcgagcag
ccgcaaagtctactgtattttggttttcttccacggcttttattttcggattgacaatacctttttctattttcggctctgtttgaaaatgga
caaccaaagtcctatggaattattaagcgaattgttgagaattttgtaaagttgaagagaagaaaacatggtaggccctatcataaaa
tcatcgcactgaaatcaataaactattgattttgcagtgatacgtcatcgactgttcaagattgtcatcggaatccaagatataatag
agaggaaggaacgagtaaggaattccagctagcaggaagaaatagagttatgacgtggcaaattgacactttgtggaattacg
aaattagccaacaaatcaattgattttcagattctatggaaaattgattccaaatgatttcactttcggctcgtcaaaactcgcaattcgga
aaatctcacgtgtcattccattgactggacaacaacaaagaaaacgtggaagacaatcaaaagatgaacaactgcaactgaaatg
gcactccagtcactgctcatcaataagcgaatgagccttccgaattgcaacaagtaactcaaaatcgacacattgtccgaaggct
aaaaacaattgatccgcaaaatcgtcgcggaagaacaaggtgcccgcgactgcccgtcaaagaagaactgatcgaca
tggagagccattgatgaattatftaaagttttattggttcttacttttaccctattatatacctcgaaagggctcgtatfttaatt
atttaattcatgtgaattatattgtctccccgtttttaaaggcctggagcctttttctccccatactatttttagaaacgggtagagctcc
gttgactctttttatacccgaatgatctgtatttattatgagttttcaagtttcaaatatcccatttctccccccagtgaaaatgtacacat
gtttatacccaatcaatctcccctaaagttttttctattgagatttattttgatttttaattgattttttgaaaaataaagttgaaaaatgata
taagtgagagaataattatggttgcatttctcgtcagtttgcggcgggtggagcacaacagcaaggttacgattgaagagggatttttga
cgaaatgagaaatacaccagattcgagctcatcgccaatggccttgatccgtgacaatctgaataaaaatgagctgtggtcagat
ctggtgttccagtttcaattgtgaaaaaatcaactcattatgaaaatgagaattttcagtaacatgtaaaaaatgaacaatttttagat
aaaattttctaactttcacgctgacatcgaaactataattggaaaatattacgaaatgttcaat

Partial Can-SKN-1 coding region:

Kmfsqsnqegysdyqqnnpqysndpkmtpgfyrpimgirwrddqslmqvqtmpltehrrsaspfgtrrsnpsrpttsnrdtysy
dpsledadlidvlwrsdiaiekvrqvapaeqyerdlqmltekstigtlaeehqryedlskgmfqdfypsfassqnnnnnyqnthnn
nlqmktenrvapipsdedlaalledvskeesqnlvfdqqnivqtqqsqqpilqnvslsegivysqnnltemslrsdelaptasnedl
qaetffnstdsntmqylympaeapvdvfpssqfsyipmindtaheqvsngnvdhrysrpptatapatrpanhdqlgaaisal
ggaarngtlssplfdpyhsmrqsfsdvtsstcsrlssesprynreegtsqgipasrfyglipndffgrqtspirkisrviptgqqqrkrq
rskdeqlatemalpvtahqisemslselqvklidtlsegqkqirrrrgknkvaartcrqrtrdhrgraidmnyi

Only a single SKN-1 orthologue is apparent in C. angaria. A search of the partial Can-SKN-1 protein sequence to C. elegans returns Cel-skn-1 with an expected value of 1E-109.

Cpo-elt-2

join(5001..5043,6093..>6148,8819..>8900,8953..>8982,9039..>9128,9187..>9328,9384..>9438,9823..>9908,9961..>10129,10212..>10309,10902..>10985,11050..>11153,11235..>11455,11554..11631)

ttgtcatcttgatgaaaaacaattcccaaaaatcccaaatgaagctgatgagcggaatgatgaaggctcaaatgagtctaattg
aagattcgggtgctaagattttcaattgaaaaagagaaacaccgtgttagctcaggggatgtgagagaaaaacaacacattagg
ttgtgacgttttataagaaaagttcagaatgttattcatgcaacctggaatgaagtaagtctctattttcagagaaaaatgtgaaa
actttggaatgcaaaaaaaggaaattacggacagttaaactataggtcttctgctgtagatatttattagatttcggtgacatgac
cataattttgtccctagtaaacatttagaattgaaatgggtgatcagactcgtaaaaatgtttctgctcagttttatattcataattgtaaattg
tttcatttcattttgttttttgaattatataatagcactgttgagaaatgagacattcccgaataaacctgcccactttgggagaactca
ctacccggagaactgaaaacattctcgaaccgagttgtttcagcattacatgaccataaaaaattgaaaatcattttcgaattaat
aactcgtttttgatgacatgtctcagttcccttcagaatctttacacagtttctgacaaaattttcaatgagaaaaataaaaatcattcat
cataaacagtattactgtcagttcatgatcgtactctcaacattgtattcattgtatgagtttccagagatatttcataaccaatcagataatt
cattcagttcacatacaagtatatattttgatgaacatacactcaaatcgcgttaataatcagaaatgacagcttatcaataaatctccatt
aaaattcatccaaagtctacaaaaccgatattatccacatgtttccatgcgaactaactaagaagattttcaatttgcgtcaaaagtccga
taatgatcctactagtgtgatgcctctgtggaatgatgctcattccgagtttctgactgatagaagatggctgcacatcagatcgcctgct
gctccaaaagtagccattgctgtggctggagttctagtctggctgtagtactaccttgggtgttattttatgtaggtatgaacaaaa
aatgaatttcagaaagccatgcatttcaggaatcctgatgtagtgcactgcaattttcaaccgggaaaaactgaaggaacaactca
gcgacctctcaatccaggagatatacactctgtagttcttctgcacaacggtttgtgatagcactgaaactttttgttcaactcaggt
tctttcgaaaaatttccagactgtgagctcatcgggaagttctcatcgtcattttctcaaatcaacatccagctgatgctattaacagccgt
tcgtaaactctatttctcaaatcattcaagaaaaaccttctcattataacatgaaaaatttcaattgaaagttttgagagagttttaca
acagtattgaataaatatttgatattgatgttcaatctgataaacgttcaataaaagtgaaaaatttcatcgtaattcacagtaatttttg
atatagtgaaaattataaccaggtgcccggagatataaaaagctaatagattttgtctaatggatggaatataaccgaacaccctcta
tctactgtacttataaaaactttaattggaagaaatattggtcactgattcacgatagaaatgtttctgccagttccagagaattttcgagttg
aacaataaaatcaaagtttgaattgaatacgttctagttgaaaaatgagaaactaacataagttggaacgttttgactgataatcgt
tttaaaaaatgtgttgaatgacatagttgtgaaaagttaacacaaaaaaaatcacatccagttttcgattaattcaaaaattgtg
agaaccactctcgattcgtttatagttaaatcaagatttcagcgttttgggtccggaaaaaactgcacaggaattgcacgactatct
ctgtgtcattcaatgagtgcaaaaaacattagttgaaaaaactttataatttttcttctactgcttactacgcccgtgaaactc
ttgtactccaaaaaccagaaaaaacatccaagaaaaaccttctcatcagatttattatactctattgtgtgcatagaatattacca
aatattatgtcatacaaccaatccgtcttattccatcatgtcacaaatgatatcattccagagacaactccgcgagccgacaatgca
agactacaacagtgacaccggctccacaacaatcacaacattactacatgccattgaaccagttgagcagctataagacaaccaat
gataattcaaaattatgacagaagaatctttgagttataaactgctcactttgaaaaacatctcatcgtaactcacatcgactacca
aaaaataattttcaacaattttcttttataatcttaaatagactataagtaattaccataaaatcgaaatattttgacttaataa
acacattttgacctggaacaacaaaattgttatgatggcaatagaactgataaacaataaactgaggcaatgaagatatttgaa
tgtttttcgataaactcgtgactattttcaagagaaaaatattctacagtgagcggctacttctataaataatcaacagttataata
aaattagccattgatgaaaaagacaatcacatcataagcagacagcttttcgagttcgagtaattgttagttttgaaacgaattggga
aagttgtaatttcaattgagtgaaatgatttatttctgaaacctgaaagtttgaaccatttttaacagttattttgagcccaa
ctagaaattgtttataataaaaaaagacaggttcaattcattttgtccatttttaagtagttttgggacaattcagaccacctatgc
agaaaactaccacattacgttttttaatttcatgttttaaaatgaaatataccaagacaaattgaaaattaccacaaaattgaggtat
gatacttgatactgtatttaacttctgttttcaaataaaagttcaccgggctgtggttaattagaggtgtaggcttaaacctggacc
aggccgagaaatattaagtagagtcattttcaaaactcagcaaaaaatcccaaatatcaaccaatgactccttattttccgagct
aactgtttcatatcgggaaaaatggcagaacaattgagaagaattgaaaatttcaaaatccaagtctcaaaaattatgaaatga
tgattttagtcggttttcaccagaatgatattttgtagaaaatgttacaactggctgaaatcatgaaaagttttcaagacacttcaacc
aaaaataaaacgttcatatttactctacagacctcggatttctgctattttgaaatttctccgggctgactcgaaccttattctgaaa
attttcgaacaacttctacgatgttcaagtttttcagaaaatgtcactttttcagacacttactgaaaaaacaattttaagcatttcaatc
ggttttgtcgaaaaacttactcacatcagcgtactttgtagataaaatctattatcaaatatggaaaaaaaaatgataaaattggtttttattt
atcacaataattgcaaaatccgctgaaaattcatatttttcatggagcgttctgcaattggaaaacatcaaaactcgaatcgaaaaata

ccactctatcagagtatctctgttaaacgtaaccctgaaactaaactttcgagaacaaatggaataagggatccaatcaaaaattt
caaaaacccaaacttttcatgtcaaccctattagtttccaacatatattttgcaagagggggcacctccaataacttcccttccctttcca
ccactcgtctactttttctgtctaccattgtctcaattaacaggatgattccatacaccgaagtaataactccttatcaatgttggtg
ttgagcgggtatataatgtagtttgagaaaaagtgattgccgaaactaagtgctgaatatggttgaaatacattgacatggttcgagtt
cagaaaaacggaggcaacttcggcgctgggggaatcagtcattatgaaattgagagaaaaacgcatggaatcaagaaacattgt
ttcactcaaaaattcaactcagaaacacattaaaattataatagaagagctttgaaaaaataagaacagtgaggataatcatgattt
tcatcacagttcggtttgaacacgcctcatgttttgatcgaatgaactaactaggtaaatgtttggatctggattttagggttcctaaaa
aggaatatgtaggtagctataagtctaaacaactgtcacaattgttttcgaagaactgtcagttgaatttcagaactcacaatcgtaaaa
atgtgaaaatctttttgtgtttttgagacgtctgtgtacagtgtagggagtgatttggaccaataattttctgaaggaactccatacctca
gcaagtttcaaaccatcattgactagaatgagctcaactaaaaatgacaccaattgaaagcagatagattcacgaagttacac
cgagatattgaaatactcaagaatacgtttatcacaactttccgacaatgtttctggcggtttcagaaaaactatggccaggattattgga
agaaaagcacaactaaaaacgcgggtgagttttcatgaaaaaaagagatccctaacaaaaacaattttgtgaaaccttcggaaa
ctagcgtttttgaaaacaaaatttgaagttggactgttttttaatactatttctgcgttcacaaaaatcagaaacaaaaacctgaa
aaaaatcgagaaatgactggcaccacaactacaacttcatgtagtacgggaaaaaatccagacactttcgaatataatattgaa
attttctccctatttgcagaaatgatgacgtacacactgatttgggtgcaaaagtcgatctttaaagttttaactgacattaacatgatttt
caatcacaaccaaagcctcatgagattcctaaaacgttaattttacataatataactaccagcaaaaagtgaatttgatttcttgatt
cagtgcaataaatctctcgtttttgtaattatagttttcgaaaaatttgaatcaaaaattgaaatcacaatgaaaaacaaagaaa
gtgtgtttcaatactactatcaacaaaaaggttagaaactcaatcgcgaacttttcaacgttatattgaaaaagataatgttatctgt
aattgataatcttccatctgaaccatagtgatatcaaatcatcctgaacgataaacacagaatagtgataaaaaataagcattttcaattt
tcacgcctctccttaaccctgtatattcagacttcttcagatggatttttggtttgaaactttcacccccatattcaaccttataatagctaa
tatatgcgatgtattaatgatggctgtattatattgtgtataatgttgggctgaattgctgaatagagcagtgatgtgcacatttcattgccgtc
atftactgataaggatacagtagccggaatattgaatatagagtcgcgccctattacaacaagtggaactcaaggttctaccatcatttt
tgtgcaaacctcgatatttctgtgggtacattccaccatccagaaaagcgaagaatttcaaatttccgaggaagtacagataatttttg
acaaaggtgagtgctattgaaatcgaatataagattgaattaattttgacctacgtatcacaatgatgtaaatgtgctgaaaaa
agattaaaattgaaaaattaaaacgagttcgagaaaaataataaaacaatcaaatcatcggttgattcgttatcaaaaattgtctag
ataggtgagaaaaacgtttcgaaaacttttcagttttaaagtaagaaaaccaccgaataaccaaataaaagaaaccattatgagtc
tctgcgagcttctgctgctgggtcaagtttcgatttgcagaaaagttgatttctcgaaaaactttttgctgaaaattttcatcaactaaattag
aaactttaaagtcataatcacgaaattccgtattccggtttatgaattactgtatttccgctcgaataatgagaattttccaaaatcg
atagatcaagaaaataatcaatgaagcttacacaacacacttggcaacgaatgaacagttcgagttgctgtaacaaaattgctgc
tgtaaaaactcaacaagagttacaactgtttatacttttaaaacacaaaaacgtgatggaaggaaagaaatcgttgattttctcatga
gaaaacgtattgagatgctgaaaaaccatttccacaagtcactgtgattttaacaacagtgcttctgctgatttcaaaaataatggtctc
tattaaatttctgtatcactttatttttctgatgtcaacaacgatgtcagagcaccttttccaaaattctgacaatgattttaccacaaaagt
gatcttaatacaaaaacaaaataaataagacaagaaagattttttattttctgtataggtcggaaatgatgaattgataacttccctcaa
tagtttgggtgtagttttttctggttatcttgaaccttcacaatcaactatgagcatagttatcaaacctgattatcaattcagaagcca
ctatttcagtaatgtttgataattttcagaataaaactgactctataacccttgaatttctgtatatcttttccatccggttttgattcgtgata
aaccaaaaatcaaaaaccgtgactcatgttaaactatttaattttgaaaacgcttatttcaaccgtactctcctgatgggaggagttgg
aacacaaaactggcgaatcagaaaacgtcgttttaaccatccagtcgagtcgggtacttaccctcaacagtaagaaggggcgggtgat
aagataagacgtgagcgtgtgagtggtgagcgagcacataattctcgcacatactggctcgtctattagtttcaaatcattttacccttcc
atctacccttacaatctcctattttgcttgataaaaattatctacttttctcgggttctatcgtttcacacgtttttctgctaccgctgttttt
tgtgatctcaaaaaacttatctataaaactgatgaaaacataaaaaacgtctaacaatgattaggaagaaataagggagttcatt
aaaaaaaagattaatggttcaaagttttatgaatttaggaaaggactctgtggaatactcctttatgaactgaaagaatagggacaat
attttaaaagttgataaaacaactgacatgagaaatgttatgaaatcactgcatagggaaattatgtattactaaaaaaatcgataat
gactataatattcaaggaagttcaaaaatcagaaagttttgtcagattcaattcattgaactagattcagtttaacgtataaatttcttta
tgtagtactagaacaggcgtggttctgggtcagttgataggaacatcaatttccataaggaactcgggttatcatggaccaatacaaca
aatgtaattctactacatgagactacatgtattcccgcacaaaacccaaattttcttagatcagaaaaattgaagtgctgattgaaatgaga
aaataataagaaatagaatgcgactgaaactgattcaaaaatccattattggcattttgtcgtgaccattcatcttaccacgttgatttt
cgaaacgattttgggttctatgtgactttttgcaaaaagacttttcgatttcacataatctttattatcggttcttgactaatctgacaaaacggc

cttacttcttaggtgtccgaactgttggttttgtaagtgaacgcttggtgtatttgaaaactgtgtacttctctggattttaaattgcaag
aaaactcattatttcgatgtcaaatggccgtccatctgcaaaaatccatttctcggattgtcagaaaacgataataaaatttttg
aaaaagcctatctggaccatagggagcgttgagccctactgcggtcatcgagaaccgcttagccaatgagtgtcagttagaatc
acactgaatttcgatgaactgtatcgaaaaatcaatcattgacacaaaacatcatttatactgaaccacaccgagatgagttcaaatta
ccgatttcttgggaatgtgtccgacttttacaattatctccaataaactgaatttccaggaagaatggatggtcaacaatatatggat
ggagttggccagaaatgcgcaaaaatcagctccaactgccaactcaaccggtacatcccacttctcaacacatttcaatcaaagaa
gaggatgtccaaaagttagtagaggaatgcaagaactgacaaatagtgagttacgaagactttaaataatgttttgattgatgaaatt
acaaatttcagtgaataatagatgagttcaattgacagccgccagagtgatcacaatcaaactgggattgattttaaactcagatttt
caaatgaccgtaagaatttcccttttcaaaaaattgggttttagttgacttattgaactccagctgctcatttattggagggccattgga
ctaccaacagttcccgggtttattgacaattcaattttcaaacacctaaccctactacaatccagtgaatcctgcccagctcagctcgtt
gagcggatttctggtgactcgtgaagtggaaacacctttgaaatttaatagaaaaattgtgagctttcattacagatcgttgatgatcggcc
aatgtcttatgatgcaaggactgcgttcccacaagttgtgagtgtaagttctcccacgaagaactttttcagtagccaatgattttcgaa
cgagaccatttctatctgaaaaacaagaacaaaaaacctatgctttttgaaactcaatggcgactaatcgtttcatagtggacctaatac
agttctatgaagccagttctatgaagccgagatgatcagttctgtgaaatggttcagaactggtttttcgcacttttcaatcgacaaattgat
gatccctttttccctaatacatgttctgactagggttcaacaacgttttttcacataaaatcagactgttcaaaaaatttggtctgacatg
aggttgcaaaaaaacacatttcaaatcactaacttttgcagaatataacgtcccaatgctgcttctatgaatgcctgaaatgt
ggaaacctttgtggttgaactataaaaaatgtgaatggagggtaaaaaatgaaccgaaacttcacaaaatcttctcaactctcaattttc
agacaaaatttgataactgtagtaaagaagtttacgaacaacctacatcacatattatgctactccagctccgccaatcattgaaaca
caactgcagttgaacaacagccatcactccagcaccggcaaaagccaccaagtctgtaataagaaaaatggcggatcgggtac
gcaatgctttatcaccaaaatccgggtttgaaacacagacctaaatttcgaaattggttggaatttttagtttaggtaattcatcaaga
cgtcaaggattggtgtgttcaattgtaacggaacaaatacaactctgtggaggagaaacgcagaaggagaaccggtgtgcaagta
tgtatttgatctttcgaaaaatagggaaatcactggaattctccagttgtgaggggtgcttagagtttttagaaaatttaagcaggtca
gcaggttttattccgcagttgagctgtcgttaagccaacctactgaaatgatcagctgaccactgaacgtaattttcgtctgagcaggtt
agctgcaacctatacaattatgatttttgcatttagcagattgcttaatacaagcggatagcctgctgaaaccaaaccaactgaacc
gaaccacaaccgaaaccacaattcagctgatttgaacgaaaccagctaaactgcttgaataaccgagtttcgctagaaataattct
ctatgttggttcgaaaatctggttaatcagatattcagattgaaaatctgacgtatttttttcttctcagcaacttctctgaaagtttgatgt
gaagtataattttgagacaccggtatttctgactggaactttgaaatcttgaataactggaacagaaattttcttacctatacaaaatttc
aagaatcaatttttgtttttcagtgcatgtggtcttactacaagctgcatcacattgccaggccaacttcgatgaagaaagaagggtca
attgcaaaactagaaaaggtgagactccgttcaacattgttttaatttttgggtgaacagcgaatttttaatttttaggaaaacgaataa
gagtgaaacacactcaactccaacaagttccgcacaaaagaacggaagttgatggatctactgctgcagacagagccgctgcta
gaaatggtgagtataagaagtaagaaaaaatagctgtgaaactcagaatgaaaaattaaaaatttaattgtgtttttcagcttc
atctatcacctacactacccggctgcgtatccggtcagtagcgggctcaagaaacaccatactacactaccaacaagcatcgtgg
aatgcagttatgggatcgtcgaagacgctcatattagcttaccatttggcctagatccagcttcccaacaactgtctactcaactc
attcttacacaactccagtttctcctcaaaaccagatgtaagtttagtggaaagaaattaagagagaaaaaacgagcgacacacta
tttctgtttcaaagctctgttcataattttattgaaaattacagcttcaagtcataccggttcaagacgatgaaacaaaagcggcggca
agagatttgaagacactacagacgaagtataagcttttaataacacttttagttgaatcacaataaaataatttattgcattttatggtt
cgagttttatcagctcatattcatattgaaaattgtttgtatacaggatattttggatttttctctcattttttgaccaatcagtcggctgtaa
agttttttttgatgataacttacgattttgcaatttcagaactgttttaacgtacttagtcattattatcgttttctgacaaatccaatcaaatggc
gtaattttgcaacttcacaactgctagtcataaaaaggggaacagttggtacgctttaaataatgatataattctcttgcaaaactcaaaat
ccaggagaattggtcagtttttacagtataaccgagcgtccctcacatcaagacgaacagctacggttccccctaaagtttaggccatttg
gccggattgtcagtaaacgatagtgatataatataagaattgaattgaaaaaaatac

Cpo-elt-3

join(1604..1682,9347..>9535,10540..>10645,10985..>11108,12491..>12667,13144..>13238,13
296..13440)

gataagctttacaaattcgtgaagttataaactaactaacgttttctagttttgttcaatgggtatfttcctctatcagatcaactatttgaacgg
aaaagaaatagtataatcccataatfttttttttttctgaacataaaaatcccgaaaatgccctagttccaaaattgttgaagttttgagta
gtttggttttctgattctcgacatacagtagccggccataaagatactttagctctgcgaggttcaaccaaccaaattcaactgattttattc
ttaaacttgagaagtaggctctgagaacataagaaacgtgctcaaattttccatattaatftaatcacttttcacagagctacaggaaa
aaaacacgttttttctgtctttatgacctatctaatctgaatgatgttcaaccagtttcttgaaaactgtatcacaacacggctctat
taacagtagatcacaacttctgacattatgatgaaaaaaaaattgggtttcactttcctactgtagtacaactttaaataattcatttttca
cagggcacacttttaagtacagtttttcaacaaaaactactcaaaaaaccattattcaaaaatacctaaaatacgggtcggcaa
aataaaagaaatctgtactcgtacttgcgaaaagttgaagcatgtcaaaagttgagctaaaacgagacagccgactttcccagaggt
gactttcaccaaaagaagcaccaaaataagctgccctgaccaccaagcggcgaacttcaaaaatacatagtgtaacatgctctcggc
atggcgttattgtttgactaatcaactcgcgccaatacaatacaaaaagaacatgggtgtgggttggcgggagccaactacc
gagcaacattatcagtagtataagtagacaatgagagaacacccaaactatcataattagtcacatgatagttcgtggtggtttca
tggtgatctatcggtttcttttataatgagttatagaatgtaaaattttcatttttataatttgaacttttctcaaaaattatgaataaga
ctgtacaaaacaggtgtttcagatttgagttaaattctgttgggttgggttggcctccctgttcaaaaataatgaaaatacatttgaata
tgaaaatctaaagtaaaacaaaaacaaaaatttctactcatatagtagtagaaaaatttggttctcaaccaactttgtttcgttttgtttt
tcataatttgattgaacaaagattattgattcattcagctgggtgttttttattgtatttctcacctgtttttctgattcttaacttctaggttct
tagggtaattttcttttttaagcttggtagcagctgacgttttaatacaaaatttattcttttccatatttaacacttttatagaattgaa
cgttttttctttgtaactcaccaaaaagatgttcaactttcagagcagtgataattataataacataaataaagatgaacagcttct
actcgacatccccacaatctacagaatccgattcttcgagcaaaccaactacaatgactggaatgtaattttttcttcttttgggtcag
atagttttgaaaaaatcaaaaaatacaacaaccgtgggaaaaagaaaaatagatttgatctaatcgaattgtgatgtagaattg
gtctgtgggggggggggttatcatataaaaaatgaacgaaggatgatttttccaaagttcaaacggttgaacgatagttgagat
atttttgaaattcctgggggtttgggggtcaaaaattttttcgaagaaaaaaatttcatcaaaaaatttttttgaaaaaaaatttctt
ccgaaaaaatatttttttaagacattaaaattttgccagttactatttagtcttcaacaacatgtaaaaattttgattctagaaca
ttcaaaaaattgatcgctccaactataacgtttttttcaaaaaatcttttgttagttattgtttgatcaalatttgattacatttagacattaca
atttgagacgatgatcgttagtfaaaaaattggtcccctctttcatcatcgtctctttcatcgtcaaaaaattctacttttcatgttccatg
ttttttgttagtgcattctcttccaccctcagcactcatcgtccaattttgtttattttgattttctatttctttttatattttttaa
aaaattgagaagtttacttcttctcagagtttctgatgaaaaatcatattttactgtttttgtattaattttgtccacattgattttatagctgact
aattgcttcaaacgaaaattttcatcgaaaaatgataatttctgaactttttccataaacagtttacaattttgtgatcagccaaattttgtc
gaacaagcgatttctgtgaacagaagattttgtgaacagacaattatgaaaaaaaaattttgtgaacagccgattttttgattatcc
aacttcaacaacattttctgaatagatcggtttttccatgagcagcgtagattttagggtgaacagcagattttttctgaagtattctaaa
aaattctataataacgttggaaattttttgtcgaaaaaaattttaaattttgtttggaaaccgttttagagcaatgtattttgtgaacaataa
gatttctgtgaaaatagcggcaaaaacttctaataacaatgtcaaaaatcagttttttcgaaaaaacggctatattgtcaaaattttgatc
gaaaaaaagactgtttgagaaattctgttcaatcaaatcagctgtcagctgaattcaaccgtttgaaaaattttgtgaatagttcaaaa
aaattgtgaattataaaattgccaggaatgcgactcgtagaagtgattgaattatccatggtgcattttctgtcgaagaaatta
aacctttttgatttttagtaaagtttactgatcgtgatttcaaaaaatgtcagatttgaagtttcatataaaaaattcagtttaagaaaa
acagaaaattaagaaacgtgctcaacgaattcatgatttcaactacacaaattttgatattgttggtttcaacgatttcataatattgg
tattcactgaaatagctaattttcttccgggttttctaaaattgatgtttaaattgatcgtttttgatggatattcatgcttgaacacctag
cagaattttgttctattagcggcgactgaacagcctacattgaactgagtgagttgaaaaatgctattcttccgtcattttgaggcgttcta
gtcatgcttattaggttttgaaatgctgatctgtatgaagtcggccgcttcgaaaagctcgtgctgactgaagtttcttattacaact
tccgaactcaaatatcaaaatttctcactctccaaacacaattctatatccttatcatcatttcttccccattgttcttcaagatacgt
tataatatcaacaatttgaattgctgtagcttttctagaagattttagcagccactgatgcttcatcgtaaaacttctcgttctcctttccct
tttcttgaattggatcaatctgttctgctgagggctgacccttgaaaaattacggtagacaatacgcacgcaaaaggcatgcagag
ggaaaaaggcgcagaacgttttgggttgattacaacaattctcgcgcttactacgtggtcactactatctttcaggggagaactatftt
tgagactgtctgttttataatcccttgcaacggttgaagtgcccggaaaataactgaagaaatgaatacaactactagagggtt
agttgtcagtcgaaagcaaccaatacattgttccaggtcattttctgagatttacttctagcgcacatccgttttctccatcataaattatca
ctagcaagcaatttccaccccatagggctctatcttttcttctatcacaacttttcatcagcatcagcagcatcagagtcgggaatg
tatgttgacgtcttcatctccatctcgccttagttttcgccttcaacttctacgcagcgcagcgcgatcgcaaaatgcaaaaacgcaaa
aaagtacagtactgactgcggcgagaatagagaccacgatcaaccacaatttattgttaaccgctgttctgatccttcccactacat

ccatccatctcctatccatctatccgtctatccatctatccgtccatccgtccatccgtccaagggacagcgacagaacgacgcctgagg
cggggaccgatgtcttttcttttcttttcttttccatttccattttctctgttccgtccaaccaatccgagtagaaacggtattagaaaaagg
aagaagggaaaaaagaaagagcgcgtaataactgtatgtctctggagaagggctgatatttctcaaatcactgcatcactttcgctcc
acgatcgaccccggtaccgaataagctcgtattgttcttctcccacccatgattctgatgggtgctgcggttagtactcgtttgaaatcg
ttcttttgataaataagatattctatcaacttccgaattgttccctcctcattcatccggacgatgaccaattaacgtttgcagcctagatag
attctcgaaaaagtactgataactatttttgattttgaaataatgaagtggtgtaataaaggatactgtaataactactaagggtct
cgagcagagtcctaatttgatatttttcagttcggaaagtacatttccgaactaaagattcattttacttcaaatcttacaagtggtggtg
ttgttaggggtcagaaattgatctctcctgaaaattcactcagagtaggtatttctgatccaaatggttttgattttatttctgggagtttctg
gcacctgttaccagttatacagccctcaggctctcaaacacaaaaagcagtttttgggtattttgccacggaagagacaattttt
gagattctgacatagctgaacataaattcaaacgctgaaaaaataatgagtcgttttccagttgcagaattattccgttggtatacaattc
acctcaagactctgaaatttggattgactggataggtttcgaatctcttgattttgccctataattacaattccatgactgcaaaattgaa
attctgtctcaatagccaagatgacacgtggaaatcaatttcaaaatccacggaccattcgaacgcgtctgtgaaacgaaaaattca
aaatttcagttgactgttatagggactgagtacaagaaaaacgttctgttagatatttacaagtagaaaaattttttaaatttgctcc
gaggatagttgtcttggatcccaccaagctaaaactgggaacgagtggttttcaaaatcaaatagtagagatgaaccacca
aaaaccatagatcgtttttcagatcaaaacctcgagaacaaaaaaactgctctaggcctcagattcttataaaaaagcaggat
tttattaaaaatcaatttctgcagtaatacgcagtaaaagctatggattactataatcttcttctgttggctccttctctatttttaac
ccacacctgattactttcagtttattcatttctattctcaattgaacagatttttccaacaatcttaggcagtttttgatctactttgccat
tataggtgctttattgcattatctgtcctcatcttctcaaatcagtcactagaaaccacaattctgaccctctgaccttttaaaatcaga
aattcatttccatgatccattgaactacattcactcttcaatttgataagcatttgttaaatgttatcatttcttccgaacgcctactgatttta
acgcttttgaaatcttctgattcgtttgaaaataatctgataaaacttgttgcggtgtttatttattacaactctggttcaaatcgtttcaat
cattttgttgttttcaacaataagatagaaaaagcagaagcaggagcagcaaaacaatacatttttgaaggaaaaaaagaaacgtt
tgtaataatttgtattcaataaaaaaacgagatcagagacccaaagttctcacgatttgaatctgaatggaagcttttccgttccctacctt
tccgctactcagagatggcggaaaaccgtaccgattatgaatatgtaaattatgtaaattcgtgtttgaaaccagctcgaagttttctca
cctcaattctatccaactttgtcatttttacttttactttctactttctcaattggctatcactttccattttcaatttctgtttttcttttcaagt
tgcgacactaccaccaccacaacattatgcaataaaagcagtaatgatagtgaaatgtagttgtaaaaagaatcaaaaaat
ttataattttctattttctattttctattttccattttctcaacagtgatttgaaaaagcgtctccaccagactagccagctataagtctcggct
ctctcggccattgatggcgaaaaaggaaaaaagatgggcccggcgaccactctgcataccgtagtattactgccaatcacgggg
cattgtctttttgtctattcaacgtttttgcgctatcggctatcatctcccctcacgcacgcccgaatcaaataccacataccaaaaat
gtaactactactcataaaatcattattattaacaagagtatttttctgcaaaagttttggttttgcgcatttttctttttgattgatcca
tcgattttcaaatcttccgaaattcctcaatttttgacttcagaatcagaatctgtgataagataaggccaaaaaacacgcttagata
aaattaaggaaatggggggaggaggatcaaaacacaccccaaaatacaaagtttcaaaaaacaaactaacacagccgtaaca
agggacctccagagttaacaaatagttgaaactaattttctaaactgtggaatgaaaaacgccacatagcatcacaggctttaa
aacgggaaaaaacacattttgaccgtaattttcgaattttcgaacattttccagtaagaatgagctgggctgtttcattttttctgata
gagcacacttaggactattgaaataaaaggattaggtattcaaaaaacagtgacctacagccaaaaaacagctcagctcgtttatgtg
attataccacctcaacaaagtgaatgtgttttgaatataccgaaatccataaatttttaataattgacacccccagtgcttaccagga
aagaatgaccagtagatcgaatcttttgagagaagttgacaatttgcataaagagagtcataaacgctgtctcggaaatttttttca
ctctagtttttccagatcatatgaactactttgtaaaatcttggattttcaaatttttgtctaaactctgaaaccttctgtgagaacttttagca
gcttgagaccagctaaactgctgaataggtcaaattacctgctgaagggtcagaagataagctttctcaattcagtaactaactttctga
ataccccaacttattgaaaactttgaagtatctgattagcttagaactgacgacactctgctaaaatttttccagaatctacagatgtttg
tcgattagacagaaaatcttccatttcaacagagtaacaaaaacgcgatttcaaaaggttttgcgaaagtttgaaaatcagattgtttttt
ttaagaatctgtcgaatttgaaaacctgttgacttgacttttgaaggataatctgtgaaattatgatattttctgaaaaccgctaaaac
aagacagctcattttgattctgaaagtgacttttttagcagattagccgaccttcagggttagataatcaattcatcaatataacctgctga
acgtcacaggaattcagcaggttatcaacgagttagctgtctaatgtaaggctcagatagtttagttagacaaccaattagcttattgaaaact
cgctgagactagctaatgaactgttgactttgaaaatgacattctgtggatcagttgaccttcccagcaagttttcaaaactcaattcaatt
aacaagttacctgaacaactctgctaaacctgtaatccatcagcttaccttcaaaaaaccgctaaaaacacgattctcagattccat
aactttgaaaaagttctctttgtgaaaaaggttacgatgtacaatataaacagaacatgcaaaaaatggaagggcaaagcttggtg
aaaaatagaaagtatgagaaaggagtcactgttacacatatcaaatatgtggggaagaagggtttgccatccgattgatgtttaca

ctttcagcgcttgaactgtatttccgtaaaaaacaaccgcaaacgaccactctcattgCGaaaggatggcatcatgaagagaaatcg
tcgccacgaaaccaatcgccaaatgggtggcatcagaagacaaggacatgctgcagcttgctagttcaaagcgagcaactcacta
taatTTTTCGTTTTTCTGTTCAAAATTTGATATCTTATAACCCATATTGACAGTTCAATGGTGTGTTGACTGTATACAAAATGATGAC
atgaattgaatcagTTTTGATTGTAATTTCAATTTCAATTCATTCATATCACAAGCTCGAATGGTGCAGATAGTCATGAGAGGGTCAACT
gaaacccgaaataaccgaataaccaactttctcaatTTTATGTGATTTTCTATATTTCTTTCCGTGATATCTCCCTTCGATTCTGAAGA
aaaagtctagtattcaataactcttgccatttccatactgatcttgattacctaaccataatcttattcactgCGaattttccaatatcat
atcttctgttattgattTTTTCTGATCATGTTTATACTATTAGTCTTTTTTTGTTTTCTTTGCCAATTGTCATCGTCAAATGACCCTCTTTTTCAA
ccaaccttttagtaccacgtaaatTTTCCCATGACTCGAAACTCGAAATGCTCTCTGTTCCCTCTGAAATTTTTGTGACAACCAATTT
ggttcattttgtggatatttactggattcaagttctacagtttctattgttctctatttttctctatatgttttgtttttttcttccattttatTTTTat
cataatTTTCTGCATTATCAATTTTCATAATCATAGGCATAACAACCTGTATACCATGCACACAATAAAAATATAAAATTTCACTAGCTCG
gaaattagaacaatgaaaaaatgtgacaaagttgatgacctgacaaaaaatgaaaaaaactgTTTTGTTATCAATTGGA
gattggtaagagaacaaggTcattttgCGATGACTGAAAAATGACGAATTGCGTCTACAGAAGAAGTGCAAAAATGATCGATGAAT
ggaaaaatctccaaaaactgggttCGAACACGATTGAAAAAACTGAGAGAATTCATTG

C. monodelphis elt-2, *elt-3.1* and *elt-3.2* are described in Eurmsirlerd and Maduro, 2020.

2) RNAi clone information

Sequences used for RNAi constructs (feeding and injection, where applicable): DNA was amplified from genomic PS1010 DNA, or synthesized directly, and cloned as HindIII / SacI fragments into the same sites of pPD129.36.

Can-skn-1 (smaller 520bp region from genomic DNA, contains a small intron):

gatacgtcatcgactgttcaagattgtcatcggaaatccaagaatataatagagaggaaggaacgagtcagggaattccagctagc
aggtaagaaatagagttatgacgtggcaaatgacactttgctggaattacgaaattagccaacaaatcaattgattttcagattctatg
gaaaattgattccaaatgatttcactttcggctgcaaaactcgcaaatcggaaaatctcacgtgtcattccattgactggacaacaaca
aagaaaacgtggaagacaatcaaaagatgaacaactgcaactgaaatggcacttccagtcactgctcatcaataagcgaaatg
agcctttccgaattgcaacaagtactcaaaatcgacacattgcccgaaggTcaaaaacaattgatccgcaaaatcgctgcccggga
aagaacaaggtgcccgcggactgcccTcaaaagaagaactgatcgacatggaagagccattgatatgaattatatt

Can-skn-1 (larger fragment, 750bp, synthesized cDNA):

aaaatgttctcgcaatcaataatcaggaaggatattcgattatcaacaaaatccaatcaatattcaaatgatcccaaaatgacgc
caggtttctatcgccaatgggaattcgttgagagatgatcaaagttgatgcaagttcaaactatgccaatttaactgaacacagatc
agcctcgccatttgaacaagaagatcaaatcaccatcaagaccaaccacttCGAATCGTTTTGATACATTTTATGATTCCCATCT
ttggaagatgctgattgattgatgtttatggagaagtgatattgCGATTGAAAAAGGTGTTAGACAAGTTGCACCGGCTGAACAATG
aaagagattgcaaatgtgactgagaaatcaactattactggttgacagctgaagagcatcaagatatgaagattgtcgaaagga
atgtttcaagattttatccaagtttgcatttcacaaaataacaacaataattatcaaaataccacaataataattgcaaatgaaaac
attgaaaatcgagttgaccaatccaagcgatgaagattggctgatttggagatgtttcaaaagaagaatcacaattgaattt
ggatttgatcaacaaaatattgtgcagacacaacaatcacagcagccaattttgcaaaatgtttcattgagcgaggggaattgtttattc
caaaacaatttaaccgaaatgagcatgttacgaagtgatgaattggcaccactgctccaatgaagattgcaagctgagacgTTTTc
aattcgactgattcgaatacaatgcaacaatatttgatgccggctgaagctgaacctgttgatgcttccaccatcgcaattctctatatt
ccaatgatcaacgacactgCGCACGAACAAGTTTGAATGTTGATTGATCATAGATTTCCGAGAATCCACCAACCGCAAC
agcaacagcacaacaagaccagctaataatgatcaactggagctgcgatttcaagtgattgggtggagctgcaagaaatggaa

caacactttcaagtccactttttgatccatattcattcgatgagacaatcgtttctgatgttgatacgtcatcgactgttcaagattgtcatcgg
aatcaccaagatataatagagaggaaggaacgagtcaggaattccagctagcagattctatggaaaattgattccaaatgatttca
ctttcggctgcaaaactcgccaattcgaaaatctcacgtgtcattccattgactggacaacaacaaagaaaacgtggaagacaatc
aaaagatgaacaactgcaactgaaatggcaactccagtcactgctcatcaataagcgaatgagcctttccgaattgcaacaagta
ctcaaaatcgacacattgtccgaaggcaaaaacaattgatccgaaaattcgtcgccgcgaaaagaacaagggtgccgcgagg
cttgccgcaaaagaagaactgatcgacatggaagagccattgatatgaattatattaaagttttattggttctcctacttttacctattat
atacctcgaagggtct

Can-pop-1 (773bp from genomic, contains a small intron):

cctcaatatggattacgagccggactttcaccgaattttgttctccaatgcaagctggtctttcaccttcatttaatatgtttccaacatctcc
atttatggtgctgcaatggctgcaattgctaaacaacatattgaaaatgcagttccattagcagcaagatgagaggaacaccattga
atccgtggaatcaaatgagaatgccaccgatctaaatccaggaaatggacattacatcaaaaagaaagaggacatggcggagggt
ggaaaaatcaaaaagatgatcatatcaaaaaccattgaatgcattatgtggtttatgaaagagaatcgaaaaaattgctggatg
aaattggaataatgagaaacaatcggtgaattgaacaaagaattggcgaagatggcatgattacccaagaagaacagca
aaaatattttgaattggcgaaaaaagatcgagaagatcataaacaataatccacaatggtcggctcgtgaaaattatgcagttat
aagaagaataagaaaaagaggaggataagagtattagtaagttgtttttgttagaaaatgaaaatattttgtattttgtagttcagtt
cggagaatggtgatcagaagaatgtcgagccagattggtgtaataatcaagaaatgtggtgtaaattctgtaagagaagaaga
agtgcgaatattcgagtgatagaaatacagatacaatgatgatgattacaagatagagg

Partial Can-POP-1 protein sequence:

Pqyglraglspnfvlpmqaglspsfnmfptspfygaamaavakqhmenavplaasmrgtplnplnqmrmpylnpgnghlhqk
erghgggkikkddhikkplnafmwfmenrklldeignekqsaenkelgrwhdlpkeeqqkyfelakkdredhkqkypqw
sarenyavnknknkrrdksiisengdqkkcrarfgvnnqemwckfckrkkkceyssdrntdtmmdlqdr

Only a single POP-1 orthologue is apparent in C. angaria. A search of the partial Can-POP-1 protein sequence to C. elegans returns Cel-pop-1 with an expected value of 3E-64.

Can-elt-2 (no DBD) (522 bp genomic fragment, contains small intron):

aactttcgcaactggaacaaatcaagattattgtataacacttctcaatttttaacacatattcaactcaaccgcctccatcacaatatca
tactttatcatcatcgaagtggccgggaaattttgaattcttgaatgtttctgatttcacaataagaaaatattttcaagacatcaactcca
attttttaacagattttacgataattcggcatttataccacaacaacctttcgcgccagcaaatccagaatgtgtcaaatgcgcaaatcca
gtcatttccggaagacaagttgatggtggatataatgtgtgatactgtagtaattctaattgtatattgttcacgaattcaacaaactatt
cgatgccactttctgttcaaccaattgaacctgctcaattgaacaaattccacctccagcaccagcaccatcaaaaccacaaaa
tcatcaagtaacaaaaaagctggatcagctggaagcacaatcgccgacaaggattggtt

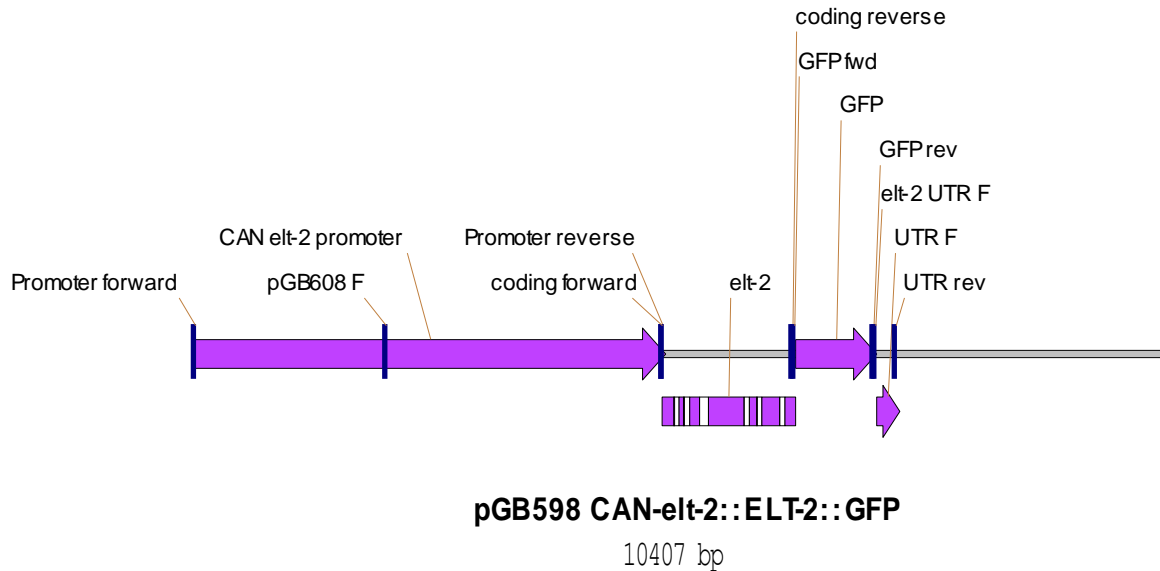
Can-elt-3 (no DBD) (270 bp fragment, common to short and long isoforms):

ccgatgctcaatcaacaagatattgctaaaccgatgaatttctccaccaactacatgggagccacacaattctccaccaacagact
gtgcaactcaatttctagatctcagcggcttctccacattcaactcgtgtgatccagctctaccattaatgcaccagtcaccttctcaaca
aaattatgatgaccacattcaactttacaccacctccacaagatccattggtcgtgaacaaaaaccactgtcaaaaagcgaatgg
ct

3) Plasmid maps and cloning information

All fragments were amplified by PCR using Q5 polymerase (New England Biolabs). Plasmids were cloned by Gibson Assembly into pBluescript KS- digested with BamHI/HinDIII. Fragment sizes include primer overhangs for Gibson Assembly. Linearized plasmid maps and primer sequences are shown below.

pGB598: *Can-elt-2::ELT-2::GFP*



Can-elt-2 promoter (5040 bp amplified from PS1010 genomic DNA)

Promoter forward, ctatagggcgaattggagcttcatttattatgtcattacggaaaaccg

Promoter reverse, gacgcatactatcgatccagggactctcgatcg

Can-elt-2 coding (1436 bp amplified from PS1010 genomic DNA)

Coding forward, ctggatcgatagtagtgcgtccaccaacattgcaact

Coding reverse, ctttactcattgttctcttccagatctctcgag

GFP (870bp amplified from pPD95.67, introns not shown above for simplicity)

GFP_fwd agaggaacaaatgagtaaaggagaagaacttttactggag

GFP_rev aatagttgaactattgtatagttcatccatgcatg

Can-elt-2 3'UTR (251bp amplified from PS1010 genomic DNA)

UTR_fwd atacaaatagttcaactattttatcaataattgctc

UTR_rev cgaggtcgacgggatcgatagaatgctcatcttcgcaaactcgg

atcattttttatcacaaatcaacaatctagatcacctcgtttttctcaaaaaactcaaaatatcatttctcctactctttttataaaaaatctc
atattcgaaaacaggaagggtgacaataaatgtgagattttctcgtctctcgggtctttggaaattgaaatttttgaacagacgagggttga
atgaaaaaatgaaaaaagaaaaaaactcaaattatatggaatgagggtgaaatttttgtgctcttttccggttaatagaaaa
atggagcaaattgaaactgaagaattgcaaatgggcaaatcatctgaaaaaatgtgggaaacaattaatttctagtttttctaacac
tcaattgaacgtttttgtgtttgatgttgacattgaaaatggaagggttttccaattttcattggaaatgaatgacttcaattaaaaaga
gaaacaaaattgggggtttttcgggaattcgttattttgagggaatcgtttgtgtgaaattcattgaaggaaaatcagtttttgaatccc
tggaacgaaacattgaaaaaaatgacgaacgtcctgaagatttcaattttacaaaaaataagaaatcgtcctgtaagttaaaa
attttctcaagatttttgttgaatttgaatcggaccctgaaatcaggcaaggcccaactcaaaatataaaactcttaaaaacgcggtt
ggtttttccggcatttttctatctctcgtcctcagatcaatttaataactctcaaatagtttttttctgtatcgtttttccagggtttccgac
tttcaaaagtttgcagaacattgtcttattcagactattcaaaagttcaaaaaacaccgctgatattttctcaaattccaatctgttttta
tattcttcacattatacgcataccgatttaataccaatattcccaaaaaaattgtattttgtactaataaaactacatttccaactttatttctgt
tattcattcctaaaaataataataactaataattcataaacaataatccacatgttcgagggatcgacatataataactcaaaaaatcgtctt
aacatcgacgtcgaaggatgatgaatctacctaaaatcgtctgcacgtaaaataagaagatttggtagtccaagcaagccacacc
tcatcctgactatttattccatctcatctcatctcattcattttatttggttgatttggtttcaaacgaaaaatggttgagctcaagtctcact
gctcaaaaagttgcgattccaattgttggactcattgtctgtcgttggttcaacattggttctatataaggatgaacaataggaa
aggaaattgtattaactgaaatttccagaaaccgggtgtcactgactcaatcttggaaactccaccgaagaaccgactactcctcgt
cattttcgtatgcaatccgctgatggcgaaatggaacatctccaggtaataaattatattcaaaaatgcatctgatttttctctcacaatca
ttcagaactcatctccacttggcaatccgctcatcaaacaccaacaactgcacatgatcgttagttgaatttgcgagaacagaa
aaaaacataaaaaagcatgttggttttgatcaaatgaaatgataaatcttcaaaagtttcagatgttttattttccagtagctaca
ccacttctcctccaattagtagacaacaacttcttccagttactcaaccttcaacaacttccacaccttcatccaattgaaccaac
acaacatttaaaataattattttcaataaagtattttctgactcattcaaaaaaatgcaaaaaactccctccaaccctttctgtct
ttttttccaacaaatataaacgatcgaatataatttgaataaattgtagggcaggcttggcgtcatgatgttactgataaggctacag
tactctatattgctggctgtcaaatatgtattatcgtgaataaacagaataaattcatttccagactagaaaacaggaaaaatagaatt
ttgtgaaaataagataaattttgaaacatttcaaaaagttggtatgattatggtatcgcagaataatgtgtataaatatattat

pGB608 *Can-elt-2::ELT-2::GFP*- smaller promoter- (diagrammed in pGB598)

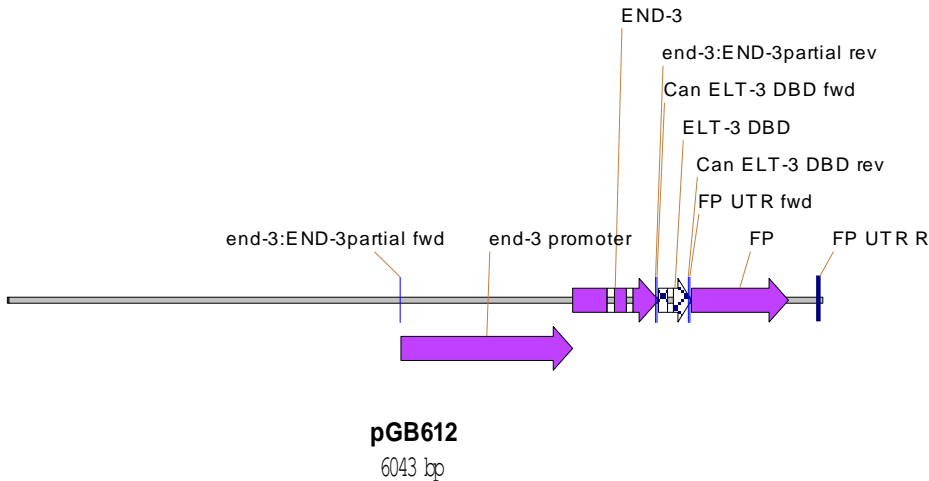
all primers used to generate pGB608 are the same as for pGB598 except the Forward promoter primer :

Can-elt-2 promoter (2990 bp amplified from PS1010 genomic DNA):

608F, cgGCCGCTCTAGAactagtgatcaaagtgaatgatgataaatcttcaag

Promoter reverse, gacgcatactatcgatccagggactctgatcg

pGB612 *Cel-end-3::END-3upstream::Can-ELT-3_DBD::CFP*



Cel-end-3 promoter and partial coding (1976bp from genomic DNA):

end-3:END-3partial_fwd cggccgctctagaactagtgcatccaatttagtgatatttattcc
 end-3:END-3partial_rev agtttgagcacgaagagttgatatgcattg

Can-ELT-3 DBD (265 bp from PS1010)

Can ELT-3 DBD_fwd caactcttcgctctcaaactgcaagacac
 Can ELT-3 DBD_rev ctttactcatgcatgtggcttgcctctg

CFP+UTR (988bp cassette)

CFP was originally amplified from pEB1-SCFP3A and the *Cel-end-3* UTR was amplified from genomic DNA. The CFP and UTR were stitched together by PCR using the following primers:

CFP UTR_fwd agccacatgcatgagtaaaggagaagaac
 CFP UTR_rev cgaggtcgacggtatcgataagctcttccactatagtc

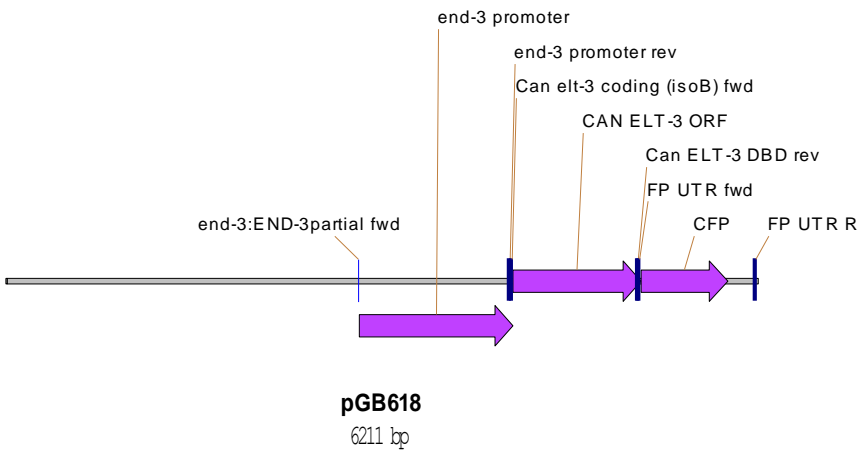
pGB608 sequence

tatcgataccgctcgacctcgagggggggcccgggtaccagctttgtcccttagtgaggggtaattcgagcttggcgtaaatcatggta
 tagctgttctgtgtgaaatgttatccgctcacaattccacacaacatacagagccggaagcataaagtgtaaagcctggggtgcctaa
 tgagtgagctaactcacattaattgcgttgcgctcactgccgcttccagtcgggaaacctgctgctgagctgcattaatgaatcggcc
 aacgcgcggggagagggcgttgcgtattgggcgctctccgctcctcctgctcactgactgctgcgctcggtcgttcggctgcccga
 gcggtatcagctcactcaaaggcggtaatacggttatccacagaatcaggggataacgcaggaaagaacatgtgagcaaaaaggc

cagcaaaaggccaggaaccgtaaaaagccgctgtgctggcgttttccataggctccgccccctgacgagcatcacaanaatcg
acgctcaagtcagaggtggcgaaccgacaggactataagataccaggcgttccccctggaagctccctcgtgctctcctgtt
ccgaccctgccgttaccggatacctgtccgcctttcccttcggaagcgtggcgttttccatagctcagcgtgtaggtatctcagttc
ggtgtaggtcgttcccaagctgggctgtgtgcacgaacccccggtcagcccagcgtgctcctatccggtaactatcgtcttga
gtccaacccggtaagacagcacttatcgccactggcagcagccactgtaacaggattagcagagcggaggtatgtaggcgggtgcta
cagagttctgaagtggcctaactacggctacactagaaggacagatttggatctgcgctctgctgaagccagtacctcggaa
aaagagttgtagctctgatccggcaacaaaccagcgtgtagcgggtgtttttgttgcaagcagcagattacgcgcagaaaa
aaaggatctcaagaagatcctttgatctttctacggggctgacgctcagtggaacgaaaactcaggttaagggttttggatgagat
tatcaaaaaggatctcacctagatccttttaataaaaaatgaagtttaaatcaatctaaagtatatatgagtaaacttggctgacagtt
accaatgctaatacagtgaggacctatctcagcgtatcttattcgttcatccatagttgcctgactccccgctgtagataactacga
tacgggagggccttaccatctgccccagtgctgcaatgataccgcgagaccacgctcaccggctccagattatcagcaataaacc
agccagccggaagggccgagcgcagaagtggctcgaactttaccgctccatccagtctattaattgttccgggaagctagagt
aagtagttcgcagtaataagtttgcgaacggtgttccattgctacaggcatcgtgggtgcacgctcgtcgtttggatggtcattcagc
tccggtcccaacgatcaaggcagttacatgatccccatgttgcgcaaaaagcggtagctcctcggctcctccgatcgttgcaga
agtaagttggccgagtggtatcactcatggtatggcagcactgcataattcttactgcatgccatccgtaagatgcttttctgtgactg
gtgagtaactcaaccaagtcattctgagaatagtgatgcggcagccaggttcttggccgctcaatacgggataataaccgcgcc
acatagcagaactttaaagtgtcatcattgaaaacggttctcggggcgaaaactcgaaggatctaccgctgttgagatccagttc
gatgtaaccactcgtgcaccaactgatcttcagcatctttactttaccagcgtttctgggtgagcaaaaacaggaaggcaaatg
ccgcaaaaagggaataagggcgacacggaaatgttgaatactcactcttctttcaatattatgaagcattatcaggggtattgt
ctcatgagcggatacatatttgaatgtatttagaaaaataaacaataggggttccgcgcacatttccccgaaaagtgccacctgacgc
gccctgtagcggcgcattaagcgcggcgggtgtggtggttacgcgcagcgtgaccgctacactggcagcgccttagcggccgctcc
ttcgtcttctccctccttctcgcacggtcgcggcgttccccgcaagctctaaatcgggggctcccttaggggtccgatttagtctt
cggcacctcgaccccaaaaaacttgattaggggtgaggttcacgtagtggccatcgccctgatagacgggttttgcaccttgacgtt
gagtcacggttcttaatagtgactctgttccaaactggaacaacactcaaccctatctcggctctattctttgattataagggtattg
gatttcggcctattggttaaaaaatgagctgatttaacaaaaatgacgcgaatttaacaaaatattaacgcttacaatttccattc
ttcaggctgcgcaactgttgggaagggcgatcgggtcgggcctctcgtctattacgccagctggcgaaaggggagtgctgcaagg
cgattaagttgggtaacgccagggtttccagtcacgacgttgaaaacgacggccagtgaaatgtaatacgaactcactatagggcg
aattggagctccaccgcggtggcggcgcctctagaactagtgcacaaatgagtgatatttatttcccttctcatatttctgtacaattg
atttcttcaacctgttctagtcataccggtgcaaaaacttttattcattcacttcgcaactcagtcctactaaaatattgattctt
atgttgaatacttttcttttctgatatagaaatgttccactgcttgaactgttgaatgggtgttctgggggtcacaagtaaaata
gatttgcacaactttgactgaaacgaaatttgactttcaaacatttttacctaatttgagaaatgcatctttggctcaaagggtgagact
ctgtgtaggtctgcagcgaacaaaaatattcgcgcaaaaggcgtgttcccttaaatagtagtgcgcaataattttgcagtttcta
cagtatacccagtggtgtcagagtgctccatcgggttgatctcgtagatctacgggaatagcggtaatttgacgcagatttctcaact
accaaaaatatttgggtgagaattgaacagaaaaagaagaagaaatacaagcatgctgagctttacacaactttatctaataaat
attcaattaattggatcagtttctcttcagcaattcaaaaaatgttccgtaaaaatgtgaaatgattggattggagagaatcgagtttt
ggaaaaataaaaaacaagagcaacgtgttatttcatgtgatctttaaataatgcaaacggtattttaaattgatttcccctatca
gaacctcttaaatcaggtttcaaatccctcttttcttactcttctcgcacgtgaaaaacttctccgaatgataattgtgttt
aaaatggaaatttattgaagtaaaatfatgaaacaaatacttttagttaaatccgagatgcaacttctatttgagagagcccacggt
taaaaaagaagtaaaagtataccaacaagatgttccaagtgtccgatggctccgacaaaagagtatacactgattgtataatcg
gttagatgaatagctgaaagtataccaggtcaagcacacccccgctgtgtctcttagaaaaaggcgggtgctgaaaagtatacg
gaacgctgaggcagccctcttaccatgatttgcctcaagataaatgaataggcattctcattcaagataaacatgtactcgaact
cattctctcatcatcttcaactaccaatgtctttgatttggattccctcagtttccgcaacaagtccaattcaatgaagaaggct
acgggacacctctccagatgtctccagaatataaattatcatcattatccggcacaagatagacgacaaattcatacaatggagg
ctatgacaattcaatgcaacagaatttatgcaaccagataatgggtcagggatactacagtgagtttaaaaaactttttactttat
atttaaaatgaattggtcagatgaaaactatcaacagatgcctgattttcaatttccagttcaaaaattttagatttcaaatcaattg
aacgacgcttataatggataaataactatgaaactacagcctaacttaaatatttttagacctccagcaatctcaacttccatcaacc
accaatcccgaacaacaatgaaaattccatgcccagagataccaattgacgggggctcaacttttccagctcaagaagtcaagaat

```
ggaagccagctagaaaagcttcgaaaaataaaatcaagaagattccacaatgcatatcaactcttcgtgctcaaactgcaagacac
gtgaaactacactttggcgacgaaatggtgaaggagggtgtgagtgcaagtaagttgtctaactcgaaaaaaaaaattaaccaaat
ttgcagcgcttgaattgtattccgcaaaaacaatcgaaaaaggccgtgtcattgagaaaagatggaataatgaaacgaaatcgt
cgtccaagaaacgaatcaccaaatgggatcagaagacaagccacatgcatgagtaaaggagaagaactttcactggagttgtcc
caattctgtgaattagatggtgatgtaatgggcacaaatctctgctagtgaggagggtgaaggatgcaacatcggaaaactac
cctaaattattgactactggaaaactacctgttccatggccaacactgtcactactctcacttggggtgttcaatgcttgaagatac
ccagatcatatgaaacagcatgacttttcaagagtgccatgccgaagggtatgtacaggaaagaactatattttcaagatgacgg
gaactacaagacacgtgctgaagtcaagttgaaggatgataccctgttaatagaatcgagttaaaaggattgatttaagaagatgg
aaacattctggacacaaattggaatacaactacatctcagacaatgtatacatcacggcagacaaacaaaagaatggaatcaaag
ctaactcaaaattagacacaacattgaagatggaggcgttcaactagcagaccattatcaacaaaactccaattggcgatggccc
tgcctttaccagacaaccattacctgtccacacaatcaagcttccgaaagatcccaacgaaaagagagaccacatggccttctga
gttgaacagctgctgggattacacatggcatggatgaaactatacaaaatacaactgatcaactctgtgcaataagcattatttttca
atcaaacatgaccttcgggtataatcttaactattgtttattcccctctgctggttccataataataaaaaaactcatgctctgat
actacagtttccagatcaattggaattcgaacagctgttcagattgaaatgtagttgcaagaattgatttctgtgtggagtgtgaa
caataagcatgactatagtggaaagagct
```

pGB618: *Cel-end-3::Can-ELT-3B::CFP*



Cel-elt-3 promoter (1290 bp amplified from N2 genomic DNA)

```
end-3:END-3partial_fwd cggccgctctagaactagtgcacccaatttagtgatatattttcc  
end-3 promoter_rev gagtattcatgtttatactttgaatgagaatgc
```

Can-elt-3 coding (1076 bp amplified from IDT synthesized minigene)

Can elt-3 coding (isoB)_fwd aagtataaacatgaataactcaaagtcctctcg
Can ELT-3 DBD_rev ctttactcatgcatgtggcttctctctg

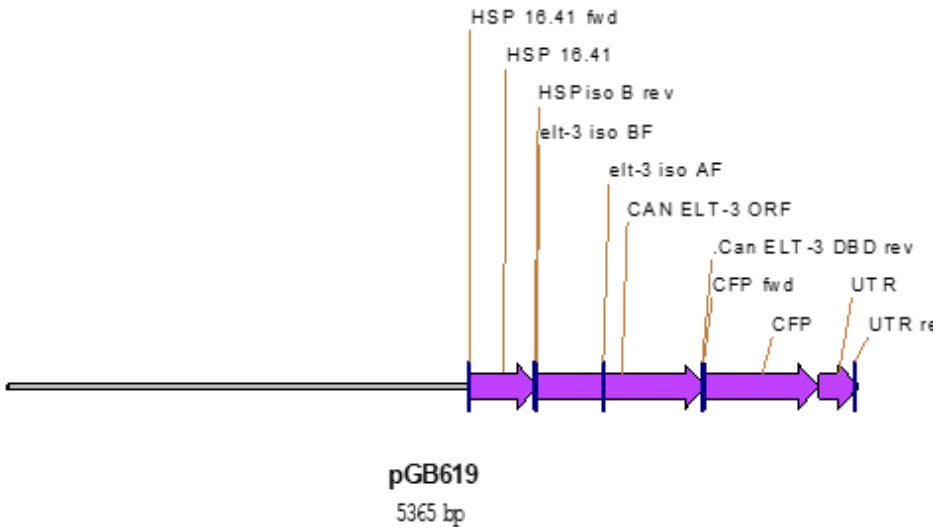
CFP UTR (988bp cassette –as in pGB612 (see above))

pGB618 sequence

tatcgataccgtcgacctcgagggggggcccggtaccagctttgtcccttagtgaggggtaatttcgagctggcgtaaatcatggca
tagctgttctctgtgtgaaattgttatccgctcacaattccacacaacatacagagccggaagcataaagtgtaaagcctgggggcctaa
tgagtgagctaacacattaattgctgtgctcactgccgcttccagctcgggaaacctgctgagcagctgcattaatgaatcggcc
aacgcgcggggagagggcgtttgctattgggctcttccgctcctcgtcactgactcgtcgcctcggctcggctcggcgga
gcggtatcagctcactcaaaggcgttaatacgggtatccacagaatcaggggataacgcaggaaagaacatgtgagcaaaaggc
cagcaaaaggccaggaaccgtaaaaaggccgctgtggcgttttccataggctccgccccctgacgagcatcacaataatcg
acgctcaagtcaaggtggcgaacccgacaggactataaagataccaggcgttccccctggaagctccctcgtcgcctcctctgtt
ccgacctgcccgttaccggatacctgtccgcttctccctcgggaagcgtggcgttctcatagctcagctgtaggtatctcagttc
gggtgaggtcgtcctcaagctgggctgtgtgcacgaacccccgttcagcccagcgtcgcctatccggttaactatcgtctga
gtccaacccgtaagacacgacttatcgccactggcagcagccactgtaacaggattagcagagcaggtatgtaggcgggtgcta
cagagttctgaagtgtggcctaactacggctacactagaaggacagtattggatctcgcctcgtgaagccagttacctcggaa
aaagagttgtagctctgatccggcaaaacaaccacgctgtagcgggtggtttttgttgcaagcagcagattacgcgcagaaaa
aaaggatcaagaagatcctttgatctttctacggggctgacgctcagtggaacgaaaactcacgtaagggttttggatcagat
tatcaaaaaggatcttacctagatccttttaataaaaatgaagtttaaatcaatctaaagtatatatagtaaaactgggtcagcagtt
accaatgcttaacagtgaggacatctcagcgtatctgtctatttctcctatccatagttgcctgactccccgctgtagataactacga
tacgggagggcctaccatctgccccagtgctgcaatgataccgcgagaccacgctcaccggctccagattatcagcaataaacc
agccagccggaaggggcagcgcagaagtgtcctgcaactttaccgctccatccagctctattaattgtgccgggaagctagagt
aagtagttgccagttaatagtttgcgaacgttgttgcattgctacaggcatcgtggtgtcagctcgtcgttggatggcttcattcagc
tccggtccaacgatcaaggcagttacatgatccccatggtgtgcaaaaaagcggtagctcctcggctcctccgatcgttgcaga
agtaagtggccgagttatcactcatggtatggcagcactgcataattcttactgcatgccatccgtaagatgctttctgtgactg
gtgagtactcaaccaagtcattctgagaatagtgtatcggcgaccgagttgctcttcccggcgtcaatacgggataataccgcgcc
acatagcagaactttaaagtgtcatcattggaaaacgttctcggggcgaactcaaggatcttaccgctgttgagatccagttc
gatgtaaccactcgtgcaccaactgatctcagcatctttacttccaccagcgttctgggtgagcaaaaacaggaaggcaaatg
ccgcaaaaaagggaataaggggcgcacggaatgttgaatactcactcttcttttcaatattattgaagcattatcaggggtattgt
ctcatgagcggatacatattgaatgtatttagaaaaataaacaataggggtccgcgcacatttcccgaaaagtgccacctgacgc
gccctgtagcggcgattaagcgcggcgggtgtggtggttacgcgcagcgtgaccgctacactgccagcgccttagcgcgccgctcc
ttcgtcttctccttctccttctcgcacgctcgcggcttccccgtcaagctctaaatcgggggctcccttaggggtccgatttagtgcctta
cggcacctcgacccccaaaaaactgattaggggtgatggtcacgtagtgggcatcgccctgatagacgggttttcgccccttgacggtg
gagtcacgcttcttaatagtgactctgttccaaactggaacaactcaaccctatctcggctattctttgattataagggtatttggc
gatttcggcctattgggttaaaaaatgagctgatttaacaaaaatftaacgcgaattttaacaaaaatattaacgcttacaatttccattcgcca
ttcaggctgcgcaactgttgggaaggcgatcgtgctgggctctcgtctattacgccagctggcgaagggggatgtgctgcaagg
cgattaagtgggtaacgccagggtttccagtcacgacgttgaacacgacggccagtgattgaatacgaactcactataggcg
aattggagctccaccggtggcggcgcctctagaactagtgcacaaatttagtgatatttctccttctcatatttctgtacaatttgc
atttcttcaacctgttctagttcatatccggtgcaaaaactttattcatttactcgcgaactcagtcctactaaaatattgattctttgtaca

atgtgaaacttttcttttcttgatataatgaaattgtcacctgcttgaactgtgtaatgggtgttctggggtcacaagtaaaataaga
gtttgcaaacctttgactgaaacgaaattggactttcaaacatttttacctaatttgagaaatgcatctttggctcaaagggtgagactca
ctgtgtaggtctcgacgcaacaaaaatattcgcgcaaaaggcgtgttctttaaatagtactgtcgccaattaattttgcagttcta
cagtatatcccacgtgggtcagagtgcccatatcggttgatctctgtagatctacgggaatagcggtaattgacgcagatttctcaact
accaaaaatattgttggtgagaattgaacagaaaaagaagaagaaaaatacaagcatgtcgagctttacacaactttatctaataaat
attcaattaattggatcagtttctttcagcaattacaaaaaattttgtccgtaaaaattgtgaatgattggattggagagaatcgagtttt
ggaaaaataaaaaacaagagcaacgtgttatggtattatcatgtgatctttaaaatgcaaacgtgtatttaatttaattgtcccctatca
gaacctctctaaattcacgtgttcaattccctcttttctctactcttctactctcgacgtgaaaaacttttccgaatgataattgtgttt
aaaatggaaattttattgaagtaaaattatgaaacaaatacttttagtttaaattccgagatgcacttctatttgagagagcccacggtaaa
taaaaaagaagtaaaagataaccaacaagatgttccaagtgtccgatggctccgacaaaagagtatacactgattgtataatcg
gttagatgaatagctgaaagtataccacgttcaagcacaccccgctgtgtctcttagaaaaaggcgggtgtgaaaagtatacg
gaacgctgaggcacgccctcttaccatgattgtctcaagataaatgaataggcattctcattcaagataaacatgaataactcaa
agtctctcgggattcaaacctactacccaaactaccgcatcaagcactgatacatcatcacgtggaagtactcatgatgaataca
ccaattccaagtatacatattcgccagcaaatatcatcatcttcatcatcaacaaaatcagaatcacaatcaaagtcagaatcataat
caagtcaaaaattatcaagatcatcaatttgagcaacagatcaagaatatcatcaccaccaagaggcgcagccacaccatcaact
accaccacaattcgagccaacaaatagttcaaatcacgagcttattattgtccatatacattcaacaacggagacaatacaagctccg
gttactgtcgcctctgtgtctcccctccagctatcgctcattaatgaaggaagttcagatcaaaagaggagtttaacgaatattatgctcc
caatccatcaatgaacgactatcgcggtgaaaagattgccaatccgttggtgacccatataattcaaattgagcaaccaatttataccga
ttttgcaaattgctccgatgtcaatcaacaagatagctaaaccgatgaatttctccaccaactacatgggagccacacaattctccca
ccaacagactgtgcaactcaattgtgatctcagcggcttctccacattcaactcgtgtgatccagctctaccattaatgcaccagtc
ccttctcaacaaaattatgtgatgccacattcaactttacaccacctccacaagatccattggtcgtgaacaaaaaccacttgcaaa
aagcgaatggctgccgtgcaatgtcatcaaaattcaattgtcaaaactgaagacacgtgaaactacactttggcgacgaaatggtg
aaggaggtgtgagtgaacgctgcaattgtatttccgcaaaaacaatcgaaaaaggcgtgtcattgagaaaagatggaataat
gaaacgaaatcgtcgtccaagaaacgaatcaccaatgggatcagaagacaagccacatgcatgagttaaaggagaagaactttt
cactggagttgtcccaattctgttgaattagatggtgatgtaatgggcacaaaatttctgtcagtgagagggtgaaggatgcaacat
acggaaaactaccctaaatttattgactactggaaaactacctgtccatggccaacactgtcactactctcacttggggtgttcaat
gctttgcaagatacccagatcatatgaaacagcatgacttttcaagagtgccatgcccgaagggtatgtacaggaaagaactatatttt
caaagatgacgggaactacaagacacgtgctgaagtcaagttgaaggatgataccctgttaatagaatcaggttaaaaggattgatt
ttaaagaagatggaacattctggacacaaattggaatacaactacatctcagacaatgtatacatcacggcagacaaacaaaag
aatggaatcaaagctaactcaaaaattagacacaacattgaagatggaggcgttcaactagcagaccattatcaacaaaatactcca
attggcgatggccctgtcctttaccagacaaccattacctgtccacacaatctaagcttccgaaagatccaacgaaaagagagacc
acatggtcctcttgagttgtaacagctgctgggattacacatggcatggatgaactatacaataatcaactctgtgcaataagcattat
tattttctaatcaaacatgaccttccggtataatttaactattgttttatttcccctctgctggttccataataaataaaaaaaactcatg
ctcttgatactacagtttccagatcaattgtgaattcgaacagctgttcagatttgaaatgtagtgtgcaagaattgatttctgtgtgga
gtgtgaacaataagcatgactatagtggaaagagct

pGB619 (*hsp16.41promoter::ELT-3B::CFP::end-3_3'UTR*)



Heat-shock promoter (444bp amplified from pPD49.83)

HSP 16.41_fwd cggccgctctagaactagtggatcaccaaacggaac

HSPiso B rev gagtattcatggatcccgatgaggatttc

Can-elt-3B coding (1076 bp amplified from IDT synthesized minigene)

elt-3 iso BF, atcgggatccatgaataactcaaagtcctctcgggattcaa

Can ELT-3 DBD_rev cttactcatgcatgtggctgtcttctg

CFP UTR (988bp cassette –as in pGB612 (see above)

pGB619 sequence

```
tatcgataccgtcgacctcgagggggggcccggtagccagctttgtcccttagtgagggttaattcgagcttggcgtaatcatgggtca
tagctgttccctgtgtgaaattgttatccgctcacaattccacacaacatacgagccggaagcataaagtgtaaagcctggggtgcctaa
tgagtgagctaaactcacattaattgctgtgctcactgcccgttccagtcgggaaacctgtcgtgccagctgcattaatgaatcggcc
aacgcgcggggagaggcgggttgctattgggcgctctccgctcctcgtcactgactcgtcgcctcggtcgttcggctcggcgga
gcggtatcagctcactcaaaggcggtaatacgggtatccacagaatcaggggataacgcaggaaagaacatgtgagcaaaaggc
cagcaaaaggccaggaaccgtaaaaaggccggtgctggcgttttccataggctccgccccctgacgagcatcaaaaaatcg
acgctcaagtcagaggtggcgaaacccgacaggactataaagataccaggcgttccccctggaagctcccctcgtcgcctctcctgtt
ccgacctgcccgttaccggatacctgtccgccttctccctcgggaagcgtggcgcttctcatagctcacgctgtaggtatctcagttc
ggtgtaggctggtcctcaagctgggctgtgtgcacgaacccccgtcagcccgaccgctgcgcctatccggtaactatcgtcttga
gtccaacccggtaagacacgacttatcgccactggcagcagccactggtaacaggattagcagagcggaggtatgtaggcgggtgcta
```

cagagttctgaagtgggtggcctaactacggctacactagaaggacagtatttggtatctgcgctctgctgaagccagttaccttcgaa
aaagagttgtagctctgatccggcaaacaccaccgctgtagcgggtgtttttgttgcaagcagcagattacgcgcagaaaa
aaaggatctcaagaagatcctttgatctttctacggggtctgacgctcagtggaacgaaaactcacgtaagggttttggtcatgagat
tatcaaaaaggatctcacctagatccttttaataaaaatgaagtttaaatcaatctaaagtatatatgagtaaactggctgacagtt
accaatgcttaatcagtgaggcacctatctcagcgatctgtctatttctgctcatccatagttgcctgactccccgctgtagataactacga
tacgggagggttaccatctgccccagtgctgcaatgataccgcgagaccacgctcaccggctccagattatcagcaataaacc
agccagccggaagggccgagcgcagaagtggtctgcaactttatccgctccatccagcttattaattgttgcgggaagctagagt
aagtagttgccagtaatagtttgcgcaacgttggcattgctacaggcatcgtggtgacgctcgtctgttggatggcttcattcagc
tccggtcccaacgatcaaggcgagttacatgatccccatgttgtgcaaaaaagcggtagctccttggctcctccgatcgttgcaga
agtaagtggccgagtggtatcactcatggttatggcagcactgcataattcttactgctatgccatccgtaagatgcttttctgactg
gtgagtactcaaccaagtcattctgagaatagtgtatcgggcagcaggtgcttgcggcgtaatacgggataataccgcgcc
acatagcagaactttaaagtgtcatcattgaaaacgttctcggggcgaaaaactcgaaggatctaccgctgttgagatccagttc
gatgtaaccactcgtgcaccaactgatctcagcatctttacttaccagcgttctgggtgagcaaaaacaggaaggcaaatg
ccgcaaaaaaggggaataagggcgacacggaaatgttgaatactcactcttcttttcaatattatgaagcattatcagggtattgt
ctcatgagcggatacatatttgaatgtatttagaaaaataaacaataggggtccgcgcacattccccgaaaagtgccactgacgc
gccctgtagcggcgattaagcgcggcggtgtggtggttacgcgagcgtgaccgctacactggcagcgccttagcggccgctcc
ttcgtcttctcccttcttctcggcacgttcgcccgttccccgtcaagctctaaatcgggggctcccttaggggtccgatttagtctta
cggcacctcgacccccaaaaacttgattaggggtatggtcacgtagtgggccatcgccctgatagacgggttttcgccccttgacgttg
gagttccagttcttaatagtgactctgttccaaactggaacaactcaaccctatctcggctatcttttgattataagggttttgc
gatttcggcctattggttaaaaaatgagctgatttaacaaaaatcgcgaatfttaacaaaatattaacgcttacaatttccattcggca
ttcagggtcgcgaactgttgggaagggcgatcgggtcgggctctcgtctattacgccagctggcgaagggggatgtgctgcaagg
cgattaagttgggtaacgccaggtttccagtcacgacgttgaaaacgacggccagtgaaatgtaatacactactatagggcg
aattggagctccaccggtggcgccgctctagaactagtgatcaccaaaaacggaacgttgagctggacgaaatagtggtta
aagtgacatgattatagttgaagattctaattcacaattagagcaaatgttctcggatatttatttcaacgggtattataactatttccactt
ttctagaacattcgagctgctgttgcaaaaggagggcgactcacattcggtagatggaagtagtgtaacacaataaagagacca
gatacatttccgtctcgtctcttgcaccaccgggagttttcaaacgaatgcatctaggacctctagaacattctgtaaggctgca
gaatgcgggtatataaggaaagcgggctcagaggaagccaacacgcttgttctagtgcataaaaaactcgaaaatcctcatcg
ggatccatgaatactcaaagtcctcctcgggattcaaactactaccaactcaccgactcaagcactgatacatcatcagtggtta
gttactcatgatgaatacacaattccaagtatacatattcggcagcaaatatcatcttcatcatcaacaaaatcagaatcacaat
caaagtcagaatcataatcaagtcaaaaattatcaagatcatcaatttgagcaacagtatcaagaatatcatcaccaccaagaggcg
cagccacacatcaactaccaccacaattcagagccaacaaatagttcaaatcagagcttattattgtccatattcatcaacaacgg
agacaatacaagctccggtactgtcgcctctgctgctccccctccagctatcgctcattaatgaaggaagttcagatcaaaagaggat
ttaacgaatattatgctccaatccatcaatgaacgactatcggtgaaaagattgccaatccgttggctgaccatattcaaatga
gcaaccaattataccgattttgcaaatgctccgatgctcaatcaacaagatagctaaaccgatgaatttccaccaactacatggg
agccacacaatttcccaccaacagactgtgcaactcaattgctagatctcagcggcttctccacattcaactcgtgtgatccagctca
ccattaatgaccagtcaccttctcaacaaaattatgtgatgccacattcaactttacaccacctccaagaatccattggtcgtgac
aaaaaccactgtcaaaaagcgaatggctccgtgcaatgcatcaaaaatcaattgtcacaactgcaagacacgtgaaactacact
ttggcgacgaaatggtgaaggagggtgtgagtgcaacgcttgaattgtatttccgcaaaaacaatcgaaaaaggccgttgcattga
gaaaagatggaataatgaaacgaaatcgctgccaagaaacgaatcaccaaatgggatcagaagacaagccacatgcatgagta
aaggagaagaactttcactggagttgccaattctgttgaattagatggtgatgtaattgggcacaaatctgtcagtgaggagggt
gaagggtgatgcaacatacggaaaacttacccttaaatatttgcactactggaaaactacctgttccatggccaacactgtcactact
tacttggggtgtcaatgcttgaagatacccagatcatatgaaacagcatgacttttcaagagtccatgcccgaagggtatgtaca
ggaaagaactatatttcaagatgacgggaactacaagacagtgctgaagtcaagttgaagggtataccctgttaatagaatcg
agttaaaaggattgatttaagaagatggaacattctggacacaaattggaatacaactacatctcagacaatgtatacatcag
gcagacaaaacaaaagaatggaatcaaagctaactcaaaaattagacacaacattgaagatggaggcggtcaactagcagaccatt
atcaacaaaactccaattggcgatggccctgtcctttaccagacaaccattacctgtccacacaatctaagcttccgaaagatcca
acgaaaagagagaccacatggtccttctgagttgtaacagctgctgggattacacatggcatggaactatacaataatcaact

ctgtgcaataagcattatttttctaatacaaacatgaccttcggttataatctaactattgtttttatccctctgctggtttccataataaata
aataaaaaaactcatgctcttgatactacagtttccagatcaattgtgaattcgaacagcttggtcagatttgaaatgtagtggtgcaag
aattgatttcctgtgtggagtgtgaacaataagcatgactatagtggaagagct

pGB620 *hsp16-41promoter::ELT-3A::CFP::end-3_3'UTR* - see notation in pGB619

Heat-shock promoter (444bp amplified from pPD49.83)

HSP 16.41_fwd cggccgctctagaactagtggtacaccaaaaacggaac

HSP16.41 isoArev cttcctcatggatcccgatgaggattttc

Can elt-3 coding isoA (665bp amplified from IDT synthesized minigene (noted in pGB619 above))

elt-3 isoAF atcgggatccatgaaggaagttcagatcaaagaggag

Can ELT-3 DBD_rev cttactcatgcatgtggcttctctctg

CFP UTR 988bp cassette –as in pGB612 (see above)

4) smiFISH PROBESETS:

Conjugated FLAP-X oligos (CACTGAGTCCAGCTCGAACTTAGGAGG) that were 5' and 3' end-labelled with Quasar 570 or CalFluor 610 were synthesized by Biosearch Technologies. FLAP-X oligos that were 5' and 3' end-labelled with Cy5 or Cy3 were synthesized by IDT.

smiFISH antisense probesets (with complementary FLAP-X sequence added to 5' end of oligo (CAPS)):

Can-skn-1: 19 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGttcctttcgacaaatctcata
CCTCCTAAGTTTCGAGCTGGACTCAGTGcaaatcttcatgcttgaatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGttcttctttgaaacatcttcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtctgcacaatattttgtga
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcgctcaatgaaacattttgca
CCTCCTAAGTTTCGAGCTGGACTCAGTGatgctcatttcggttaaattgt
CCTCCTAAGTTTCGAGCTGGACTCAGTGattgaaaaacgtctcagcttgc
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgttcattgtattcgaatca
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtgtcgttgatcattggaatat
CCTCCTAAGTTTCGAGCTGGACTCAGTGttggtggaattctcgaatatct

CCTCCTAAGTTTCGAGCTGGACTCAGTGcaagttgatcatgattagctgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtctcatcgaatgatatggatc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtctgatgacgtatcaacatcaga
CCTCCTAAGTTTCGAGCTGGACTCAGTGctctctattatatcttggtgat
CCTCCTAAGTTTCGAGCTGGACTCAGTGatagaatctgctagctggaatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGagtcaatggaatgacacgtgag
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgttcatcttttgattgtctt
CCTCCTAAGTTTCGAGCTGGACTCAGTGctcatttcgcttatttgatgag
CCTCCTAAGTTTCGAGCTGGACTCAGTGatgtgtcgattttgagtacttg

Cmo-elt-3.2: 24 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGaaaagcggcggaactcgaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGcgtgtcgcactactgttagc
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgtccaagtcctcgaactc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtctgtcgttcggccgaaagta
CCTCCTAAGTTTCGAGCTGGACTCAGTGctgaatctccggcaacggag
CCTCCTAAGTTTCGAGCTGGACTCAGTGcgtcgtatggcgctcaagaag
CCTCCTAAGTTTCGAGCTGGACTCAGTGaaagtcttcgtaggccggtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatacgcgacgtgcttggg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgctatcgaaatgtagtggcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGatctgcacgacttgctgta
CCTCCTAAGTTTCGAGCTGGACTCAGTGcgtcgcataatccatcgtagg
CCTCCTAAGTTTCGAGCTGGACTCAGTGAatagacgtcgcctcgaac
CCTCCTAAGTTTCGAGCTGGACTCAGTGctcttctctcctcgacgag
CCTCCTAAGTTTCGAGCTGGACTCAGTGacttgagtccttgtagacac
CCTCCTAAGTTTCGAGCTGGACTCAGTGtctcgcgggtttgcaattg
CCTCCTAAGTTTCGAGCTGGACTCAGTGAagcattgcactcgtatctcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcttccggaagtacaggtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcagcggacgtgcaaagttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcttgacgatgtggttcttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtctgtagtagacgtagcgcctc
CCTCCTAAGTTTCGAGCTGGACTCAGTGAacacacgttcttgccggtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcaggtgtgccccaaagagct
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgggcgtactgctgctcgcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgcctcatcatccgatgcat

Can-elt-3 (probeset1, detects both isoforms): 24 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGggattgggagctgtaaataac
CCTCCTAAGTTTCGAGCTGGACTCAGTGAacgcgatagtcgttcattga
CCTCCTAAGTTTCGAGCTGGACTCAGTGccaacggattggcaatctttt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtctggtataaattggtgctca
CCTCCTAAGTTTCGAGCTGGACTCAGTGgattgagcatcggagcatttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatcgggttttagcatatcttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGccatgtagttggtggagaaat
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgttggtgggagaattgtgtg

CCTCCTAAGTTTCGAGCTGGACTCAGTGtctagcaaattgagttgcaca
CCTCCTAAGTTTCGAGCTGGACTCAGTGacgagttgaatgtggagaagc
CCTCCTAAGTTTCGAGCTGGACTCAGTGattaatggtagagctggatca
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgtgagaaggtgactggtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttgaatgtggcatcacataa
CCTCCTAAGTTTCGAGCTGGACTCAGTGatcttgtggaggtggtgtaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttttgttcagcgaccaatg
CCTCCTAAGTTTCGAGCTGGACTCAGTGagccattcgcttttgacaag
CCTCCTAAGTTTCGAGCTGGACTCAGTGaattttgatgacattgcacgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtcttcagtttgagcaaat
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatttcgtcgcaaagtgtag
CCTCCTAAGTTTCGAGCTGGACTCAGTGtaciaaattgcaagcgttgac
CCTCCTAAGTTTCGAGCTGGACTCAGTGtttttcgattgttttgcgga
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcttttctcaatgacaacggc
CCTCCTAAGTTTCGAGCTGGACTCAGTGacgatttcgtttcattattcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatttggtgattcgtttcttg

Can-elt-3B-specific (probeset2): 16 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGccgagaggactttgagtatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGagtttgggtagtaggttga
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtatcagtgcttgaatgcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcatgagtaactaccacgt
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtatcacttgaattggtgt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgatgataattgctggcga
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtgattctgattttgtga
CCTCCTAAGTTTCGAGCTGGACTCAGTGgcacttgattatgattctga
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttgcctcaaattgatgatct
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttgggtggtgatgatattct
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtgggtgtagttgatggtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgaactatttgggtcga
CCTCCTAAGTTTCGAGCTGGACTCAGTGtccgttggatggatgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGagtaaccggagcttgtattg
CCTCCTAAGTTTCGAGCTGGACTCAGTGctggaaggggagcagcagag
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttcctcattaaatgagcg

Can-elt-2: 24 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGggattgggagctgtaaataac
CCTCCTAAGTTTCGAGCTGGACTCAGTgaacgcgatagtcgttcattga
CCTCCTAAGTTTCGAGCTGGACTCAGTGccaacggattggcaatctttt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtccgtataaattggttctca
CCTCCTAAGTTTCGAGCTGGACTCAGTGgattgagcatcggagcatttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatcgggttagcatatcttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGccatgtagttggtggagaaat
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgttgggtgggagaattgtgtg

CCTCCTAAGTTTCGAGCTGGACTCAGTGtctagcaaattgagttgcaca
CCTCCTAAGTTTCGAGCTGGACTCAGTGaccgagttgaatgtggagaagc
CCTCCTAAGTTTCGAGCTGGACTCAGTGattaatgtagagctggatca
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgtgagaaggtgactggg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttgaatgtggcatcacataa
CCTCCTAAGTTTCGAGCTGGACTCAGTGatcttgtggaggtggtgtaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtttttgtcagcgaccaatg
CCTCCTAAGTTTCGAGCTGGACTCAGTGagccattcgcttttgacaag
CCTCCTAAGTTTCGAGCTGGACTCAGTgaattttgatgacattgcacgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtcttgacgtttgagcaaat
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatttcgtcgcaaagtgtag
CCTCCTAAGTTTCGAGCTGGACTCAGTGtaciaaattgcaagcgttgac
CCTCCTAAGTTTCGAGCTGGACTCAGTGtttttcgattgttttgcgga
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcttttctcaatgacaacggc
CCTCCTAAGTTTCGAGCTGGACTCAGTGaccgatttcgtttcattattcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatttggtgattcgtttcttg

Can-elt-5: 24 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGtgatgatgactcgatttgtgc
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttaattcgggagtttcagcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgatttcggtgcaattgta
CCTCCTAAGTTTCGAGCTGGACTCAGTGgaatttatccatcatttgtgc
CCTCCTAAGTTTCGAGCTGGACTCAGTGctctcaagtctcatatacatca
CCTCCTAAGTTTCGAGCTGGACTCAGTGtccctctctttatcactgataa
CCTCCTAAGTTTCGAGCTGGACTCAGTGcacgattaatcgattccttgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGagaaaatttccgaattctgcgc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtcgtttctcatctgataatc
CCTCCTAAGTTTCGAGCTGGACTCAGTGgaaatggtgaactagccgagac
CCTCCTAAGTTTCGAGCTGGACTCAGTGgatcgaacataaatccgtttgc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtattcatcatttgttgggtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGggtttctggagttttgttgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcgtatggtgatgtttgatgtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgaattgttggatggtgtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGatcttcatcattattcgaagcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtttggctgcatacaattcgag
CCTCCTAAGTTTCGAGCTGGACTCAGTGgatgagtccgatgtaatcgata
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgttgaatgaaatctttgcgca
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgcgttttgatttgatacatca
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatggctagaagttgactgaac
CCTCCTAAGTTTCGAGCTGGACTCAGTGatgagaaggcgttgggtgatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgagttgattgaattgctcaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGtattcaattgctcctgaacttg

Can-elt-1: 24 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGcgcaatttacacactctcgg

CCTCCTAAGTTTCGAGCTGGACTCAGTGccaaagtggcgtgtttgaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGgcaaagataatgccgccc
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtgataataatccacaggcat
CCTCCTAAGTTTCGAGCTGGACTCAGTGccgattttgtccgttcatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttttcggcttcaccaacg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcgttttgagtctctgtc
CCTCCTAAGTTTCGAGCTGGACTCAGTGatttacacatgatacgccgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgttgtgtgttcgtttgc
CCTCCTAAGTTTCGAGCTGGACTCAGTGggaaccatttcgtcgccaaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgcattacaaactggctctc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcaacctgatgcagctata
CCTCCTAAGTTTCGAGCTGGACTCAGTGttttcatcgtcaatggtcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcgatttctcgtctgaattcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGcctcctttgtgtcaatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGcaaatccattttcccatcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGagcagctgcatttacagatg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttcattcccaaacagtgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcattggtgtgtgtgaag
CCTCCTAAGTTTCGAGCTGGACTCAGTGtctcctgatgatgcatta
CCTCCTAAGTTTCGAGCTGGACTCAGTGattattgtggcgaatggat
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcatcgattgtggggtgaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGtccatgattggaattgatga
CCTCCTAAGTTTCGAGCTGGACTCAGTGcaggtcgtgcaataattgt

Cel-skn-1: 19 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGaatgtaggcgtagttggatgtt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgaagactgtcgtttgcatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGaatctgtccatttgataaac
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtggattgataggaatgatcat
CCTCCTAAGTTTCGAGCTGGACTCAGTGagaggagacagtggagtctgac
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgacgtcctgaagatccaatg
CCTCCTAAGTTTCGAGCTGGACTCAGTGaacgattgagtagctgttgca
CCTCCTAAGTTTCGAGCTGGACTCAGTGtctctgtgagtgatatggatcga
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtagtgaatcactaaacgagt
CCTCCTAAGTTTCGAGCTGGACTCAGTGcgagagcacgttgatgacgaat
CCTCCTAAGTTTCGAGCTGGACTCAGTGtatcgtggagattccgaagaga
CCTCCTAAGTTTCGAGCTGGACTCAGTGaactttccgtagaaacgagact
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgatgaacgtggagacgatgat
CCTCCTAAGTTTCGAGCTGGACTCAGTGaacaactctcgcgatcttaac
CCTCCTAAGTTTCGAGCTGGACTCAGTGaatgacatctccgaaatctgga
CCTCCTAAGTTTCGAGCTGGACTCAGTGttcttcaacactgttgcaact
CCTCCTAAGTTTCGAGCTGGACTCAGTGtctttgatactcgtgagactc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgcacgaatcttgcgaatcaac
CCTCCTAAGTTTCGAGCTGGACTCAGTGatgatgtaatggacatctgt

Cel-elt-3: 18 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGttttccactcgataatcgttc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtatggatctagtagtggttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtaggtcggttggtcaagttgaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGcagtacctgtgcattagtgaag
CCTCCTAAGTTTCGAGCTGGACTCAGTGAagttcatctggagcatttctt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtaactgtggataatggtgttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtgtgactgtgctgtattca
CCTCCTAAGTTTCGAGCTGGACTCAGTGatattgaacggcatttgatgtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgttgcaagttgaaaggttc
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtgagctgttgagaagtggaaag
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgacattgtgtgtatggat
CCTCCTAAGTTTCGAGCTGGACTCAGTGCattctttttcatcggcttc
CCTCCTAAGTTTCGAGCTGGACTCAGTGattttgatgacattgtacagct
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtttgcaatttgagcagatg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttttccggaagtagagattg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtaagagacagtgagcgttttcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGttctcttcataattccatcttt
CCTCCTAAGTTTCGAGCTGGACTCAGTGgagtttgagactcatttctag

Cel-end-3: 20 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGgaagagaatgagttcgagtaca
CCTCCTAAGTTTCGAGCTGGACTCAGTGAagacattggtgagttggaaga
CCTCCTAAGTTTCGAGCTGGACTCAGTGgggaaactgagggaaatccaaaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGttcttcattgaattggactgt
CCTCCTAAGTTTCGAGCTGGACTCAGTGatattctggaggacatctggag
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgtgccggataatgatgataa
CCTCCTAAGTTTCGAGCTGGACTCAGTGCattgtatgaattgtcgtcat
CCTCCTAAGTTTCGAGCTGGACTCAGTGctgttgcaattgtcatag
CCTCCTAAGTTTCGAGCTGGACTCAGTGaccattatctggtgcataaaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGgatagttttcattgtatgcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGattaataggcgtcgtgaattca
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgatggaagttgagattgct
CCTCCTAAGTTTCGAGCTGGACTCAGTGCatggaattttcattgtgtcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttgaactcttgagctggaaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGtattttcgaagcttttctagc
CCTCCTAAGTTTCGAGCTGGACTCAGTGatgcattgtggaaatcttcttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGacaattggagcacgaagagttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcggttcgtaagattacacgga
CCTCCTAAGTTTCGAGCTGGACTCAGTGAagatggtgtgtctttatgt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtagagtcaacaagtgagcaac

Cel-end-1: 20 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGtggggagatggagatgaagaag

CCTCCTAAGTTTCGAGCTGGACTCAGTGatgactccataggtatatggaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGttcatgggaatgaacatttcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGttccatgattatccgaaaat
CCTCCTAAGTTTCGAGCTGGACTCAGTGtacatttgtgtagcatcgagtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcaaaatattgatctccaccac
CCTCCTAAGTTTCGAGCTGGACTCAGTGgattgaacaaagtattgccc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtatcgagacttccaaacattgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgatactgttggagtagcaatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttgatagcttgtccaattt
CCTCCTAAGTTTCGAGCTGGACTCAGTGgactggtggaatatttccgatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttcacaatttgcgatttga
CCTCCTAAGTTTCGAGCTGGACTCAGTGagagttcgtggaacgttgag
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcacgagttctacaatttggat
CCTCCTAAGTTTCGAGCTGGACTCAGTGgaatcagttcttccatagag
CCTCCTAAGTTTCGAGCTGGACTCAGTGatttttcggaagtacagggag
CCTCCTAAGTTTCGAGCTGGACTCAGTGtttccattattgtttacggca
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgggttggagattgtactcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGattatgacatagtttcgagtct
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtgatggaatgttctgtagt

Cel-elt-2: 24 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGcagccgttgacattatcatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGcattatttctctgtgga
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgcccgttcaattggagat
CCTCCTAAGTTTCGAGCTGGACTCAGTGtagttatttggccactgt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgagtagtctatgccagtat
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttgggtccaacattccaaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGagtgtttacgggaattccac
CCTCCTAAGTTTCGAGCTGGACTCAGTGtggagttgtatatcccgaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGgaatactggggtcgtagaca
CCTCCTAAGTTTCGAGCTGGACTCAGTGgccacagttgataagtaga
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgtgagcatttgacgcattc
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtgtggaacagttgacgcac
CCTCCTAAGTTTCGAGCTGGACTCAGTGactggaggagaatacgtggt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtttagaggattgcttggca
CCTCCTAAGTTTCGAGCTGGACTCAGTGcaattggagcacacaagtcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatttcttccagagagtt
CCTCCTAAGTTTCGAGCTGGACTCAGTGggagtttgaagtaaagcccg
CCTCCTAAGTTTCGAGCTGGACTCAGTGctgtaaagcaccttcttct
CCTCCTAAGTTTCGAGCTGGACTCAGTGcgttgatggtgtggaagagt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtctctcaaactccttctc
CCTCCTAAGTTTCGAGCTGGACTCAGTGcggcatgtgacacatatgtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtactgtacgtttagctggc
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgttgcatacacgtag
CCTCCTAAGTTTCGAGCTGGACTCAGTGctggcatcacatgaactgg

Cpo-elt-3: 22 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGtgcgagtagaagctgttca
CCTCCTAAGTTTCGAGCTGGACTCAGTGcggattctgtagattgtggg
CCTCCTAAGTTTCGAGCTGGACTCAGTGattccagtcattgtagtgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttgctgatccgaattgtt
CCTCCTAAGTTTCGAGCTGGACTCAGTGgcaaattcggagctgttga
CCTCCTAAGTTTCGAGCTGGACTCAGTGagttatcagtggttctgc
CCTCCTAAGTTTCGAGCTGGACTCAGTGggaatcgctggcaatggag
CCTCCTAAGTTTCGAGCTGGACTCAGTGacttgagttccttcatgaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGtccagctgtataatagtcgt
CCTCCTAAGTTTCGAGCTGGACTCAGTGttttcaacgcgatagtcgc
CCTCCTAAGTTTCGAGCTGGACTCAGTGggttgtccaattgagtga
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgggtgttggtaaattccg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcatgtggttcatcatgtctt
CCTCCTAAGTTTCGAGCTGGACTCAGTGgttactggcattactgtcat
CCTCCTAAGTTTCGAGCTGGACTCAGTGagggaatgctgagagggtga
CCTCCTAAGTTTCGAGCTGGACTCAGTGgctcgcgaaactgatgtgtg
CCTCCTAAGTTTCGAGCTGGACTCAGTgaaggcgattgatgcatcagt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgaatgtgcagccattacg
CCTCCTAAGTTTCGAGCTGGACTCAGTGctaatggatcttgggtggt
CCTCCTAAGTTTCGAGCTGGACTCAGTGttttagggcattggacagc
CCTCCTAAGTTTCGAGCTGGACTCAGTGgcaatgagagtggtcgttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGatttcttcatgatgcat

Cpo-elt-2: 22 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTgaattgtcctccattcacat
CCTCCTAAGTTTCGAGCTGGACTCAGTGatgtgatgtaggttgttctg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtgtttcaatgattggcggga
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttattaccagacttgggtg
CCTCCTAAGTTTCGAGCTGGACTCAGTGttagaattaccgatccg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgaacacaccaatccttgacg
CCTCCTAAGTTTCGAGCTGGACTCAGTGctccacagagtgtattgt
CCTCCTAAGTTTCGAGCTGGACTCAGTGgcagctttagtaaagacca
CCTCCTAAGTTTCGAGCTGGACTCAGTGgaccttcttctcatcgaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGtttcttttctagtttgca
CCTCCTAAGTTTCGAGCTGGACTCAGTGgagttgagtgtttcactc
CCTCCTAAGTTTCGAGCTGGACTCAGTGttctttgtgcgggaacttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgcagcagtagatccatcaaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGatgaagcatttctagcagcg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgatgggtttctgaagcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGcacgatgctgttgtaagt
CCTCCTAAGTTTCGAGCTGGACTCAGTgaatatgagcgtcttgcgacg
CCTCCTAAGTTTCGAGCTGGACTCAGTGctaggccaaatgtgtaag
CCTCCTAAGTTTCGAGCTGGACTCAGTGagacagttgttgggaagct
CCTCCTAAGTTTCGAGCTGGACTCAGTGccggtatgactgaagatct

CCTCCTAAGTTTCGAGCTGGACTCAGTGgcttttgttcatcgtcttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGgtagtgcttccaaatctct

Can-myo-2: 22 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGAaccttttgctcattcatgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGAagagcgcggtattgatgtt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgaagtctcgcctcaatt
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttcaagcgattgcatgagt
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgagcaatcttgagctctc
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgttcgcttccaaattca
CCTCCTAAGTTTCGAGCTGGACTCAGTGctcatcagccaattgatctt
CCTCCTAAGTTTCGAGCTGGACTCAGTGatctatcagcacggtgacga
CCTCCTAAGTTTCGAGCTGGACTCAGTGagctcatcgaattcagcttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgatcttcgagttgctcat
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttctccaaatcacgacgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgagttgctctccgaattta
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgaattgttcgactggtc
CCTCCTAAGTTTCGAGCTGGACTCAGTGtttttcgatgcggttcttt
CCTCCTAAGTTTCGAGCTGGACTCAGTGagaagtctgacttcatgtcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGttcgtcagccttaagacgaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGtcaaacgtcccttgatgaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGtagcgtgatccaattcgttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttgacaagttcgagaggt
CCTCCTAAGTTTCGAGCTGGACTCAGTGccttgagttgtcaagtca
CCTCCTAAGTTTCGAGCTGGACTCAGTGttggagttgacgagtagctt
CCTCCTAAGTTTCGAGCTGGACTCAGTGattcatcggctccaataagt

Can-efl-3 (eef1A.1): 16 probes

CCTCCTAAGTTTCGAGCTGGACTCAGTGgcgacttgaacgaaccttt
CCTCCTAAGTTTCGAGCTGGACTCAGTGcaatggtgataccacgttca
CCTCCTAAGTTTCGAGCTGGACTCAGTGcctggagcatcaataatggt
CCTCCTAAGTTTCGAGCTGGACTCAGTGcttgacaccaagagttggg
CCTCCTAAGTTTCGAGCTGGACTCAGTGttgttcaggaacgatcaa
CCTCCTAAGTTTCGAGCTGGACTCAGTGgaaacgggcctcagagaatg
CCTCCTAAGTTTCGAGCTGGACTCAGTGccgatcttctgatgaatcc
CCTCCTAAGTTTCGAGCTGGACTCAGTGacgaatggaacagcctttgg
CCTCCTAAGTTTCGAGCTGGACTCAGTGAacttcgagcatgttctc
CCTCCTAAGTTTCGAGCTGGACTCAGTGgacgtcttgagtggaagac
CCTCCTAAGTTTCGAGCTGGACTCAGTGacttcagtggtagcgttttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGtgacgttgaatccgacgttg
CCTCCTAAGTTTCGAGCTGGACTCAGTGatgtccttgacggaacgtt
CCTCCTAAGTTTCGAGCTGGACTCAGTGtttcgagtcagagcagactg
CCTCCTAAGTTTCGAGCTGGACTCAGTGagaactggagtgtaaccagc
CCTCCTAAGTTTCGAGCTGGACTCAGTGccttgagctcgttgaatttg

5) CRISPR/Cas9 PCR primers and sequence of *ir79* allele

Can-elt-3 crRNA targeting site 1 :gtgcttgaatgCGGTGAGTTGG

Can-elt-3 crRNA targeting site 2: gaattctccaccaactacatgg

Primers used to identify deletion mutant:

Elt-3CC1F: 5'-ctgactgtttgaggctgctcaaaaacaac-3'

Elt-3CC1B: 5'-caaattgaatttgatgacattgcacggc-3'

Sequence of *ir79* deletion:

tctggtagctcactgctcctgggaaggtagcagtactatatatagtgcatgCGCAATTCATTACCTCCCTTTTcattaaaaataatcttaa
tattttttgtgatgatagataattttttgtagtattgcttttactgactgtttgaggctgctcaaaaacaacaaaactgtttttctccatttt
ggtagctttcgaaatcgatcgttattatcagttgtttttcagacactaacaacaaaatgaatactcaaagtcctctcgggattcaaaccta
ctacca

(DELETION, 2916 base pairs)

tgggagccacacaattctccaccaacagactgtgcaactcaattgctagatctcagcggcttctccacattcaactcgtgtgatccag
ctctaccattaatgcaccagtcaccttctcaacaaaattatgtgatgccacattcaactttacaccacctccacaagatccattggtcgct
gaacaaaaaccactgtcaaaaagcgaatggctgtaagttttttttttttgaaaacgggtttattgatttccttgttgacagaaaaca
gtgatttcagaaaaacaagag