

## S8. Text

Moody R

*D melanogaster* moody has 2 predicted protein isoforms annotated (PA and PC), but *D virilis* moody has only one

These two isoforms result from alternative splicing and use of different reading frames from a common exon domain.

From blastp searches, I only retrieve the PC moody isoform from *D virilis*.

In *D virilis* genomic DNA, here I find a potential PA isoform, as in *D melanogaster*, as an alternative splice site which catches a different reading frame.

*D virilis* moody gDNA:

[https://www.ncbi.nlm.nih.gov/genome/gdv/browser/protein/?id=XP\\_002057362.1](https://www.ncbi.nlm.nih.gov/genome/gdv/browser/protein/?id=XP_002057362.1)

bp #1 = bp 16633201 of shotgun sequence found in the link

The PA isoform is displayed in **GREEN** and the PC isoform in **RED**. The corresponding predicted splice acceptors sites in similar colors.

### Sequences alignment:

```
DNA:  ggtatgtaccatgggctatggccagttcagttgcatgccaaccacatccactaagtcacg
+1fr:  ·G·M·Y·H·G·L·W·P·V·Q·L·H·A·N·H·I·H·*·V·T·
+2fr:  ·V·C·T·M·G·Y·G·Q·F·S·C·M·R·T·T·S·T·K·S·R·
+3fr:  ·Y·V·P·W·A·M·A·S·S·V·A·C·E·P·H·P·L·S·H·A·
```

```
DNA:  ctatccggttcggttttagagaaatggaaagataccggattgagcaacaaccacagccgcac
+1fr:  ·L·S·V·R·F·R·E·M·E·R·Y·R·I·E·Q·Q·P·Q·P·H·
+2fr:  ·Y·P·F·V·L·E·K·W·K·D·T·G·L·S·N·N·H·S·R·T·
+3fr:  ·I·R·S·F·*·R·N·G·K·I·P·D·*·A·T·T·T·A·A·P·
```

```
DNA:  ccttgtctcccagatgtccgcccggcgcagcagcagcagcagcggcggcggcggcggcggc
+1fr:  ·P·C·L·P·D·V·R·R·R·S·S·S·S·S·S·G·G·G·G·G·G·
+2fr:  ·L·V·S·Q·M·S·A·G·A·A·A·A·A·A·A·A·A·A·A·
+3fr:  ·L·S·P·R·C·P·P·A·Q·Q·Q·Q·Q·R·R·R·R·R·R·R·
```

```
DNA:  ggttgacagcggcatcggcgtcgacgccgcgcgctgcgccgcacatccgattgccagtcctt
+1fr:  ·G·C·S·G·I·G·V·D·A·A·A·V·A·R·I·R·L·P·V·L·
+2fr:  ·V·A·A·A·S·A·S·T·P·P·P·S·P·A·S·D·C·Q·S·L·
+3fr:  ·L·Q·R·H·R·R·R·R·R·R·R·R·R·P·H·P·I·A·S·P·C·
```

DNA: gccggcgaccaaagcgtcgcctcagtcactggagctgatgtcccgatgtccagatcta  
+1fr: A·G·D·Q·S·V·A·S·V·T·G·A·D·V·P·M·S·R·S·N·  
+2fr: P·A·T·K·A·S·P·Q·S·L·E·L·M·S·R·C·P·D·L·I·  
+3fr: R·R·P·K·R·R·L·S·H·W·S·\*·C·P·D·V·Q·I·\*·\*·\*

DNA: aaatcgaacgaatcaaccgccattggttacgccccgccgcatcggtaacgctggcaac  
+1fr: K·S·N·E·S·T·A·I·G·Y·A·P·A·A·I·G·N·A·G·N·  
+2fr: N·R·T·N·Q·P·P·L·V·T·P·P·P·P·S·V·T·L·A·T·  
+3fr: I·E·R·I·N·R·H·W·L·R·P·R·R·H·R·\*·R·W·Q·R·

DNA: ggctcaaccgagcagcagcaacagcagcaacagcagcaacagcggcggcagtcggctgcc  
+1fr: G·S·T·E·Q·Q·Q·Q·Q·Q·Q·Q·Q·R·R·Q·S·A·A·  
+2fr: A·Q·P·S·S·S·N·S·S·N·S·S·N·S·G·G·S·R·L·P·  
+3fr: L·N·R·A·A·A·T·A·A·T·A·A·T·A·A·A·V·G·C·R·

DNA: gctcaagaagagcaatcactcctacatcaacaacggcttcaacagcagcgggcacagcca  
+1fr: A·Q·E·E·Q·S·L·L·H·Q·Q·R·L·Q·Q·Q·R·A·Q·P·  
+2fr: L·K·K·S·N·H·S·Y·I·N·N·G·F·N·S·S·G·H·S·Q·  
+3fr: S·R·R·A·I·T·P·T·S·T·T·A·S·T·A·A·G·T·A·R·

DNA: gaacagcgcgctttatcgccccgcagctggctccccgccgtcggcagcggcggcggccatt  
+1fr: E·Q·R·R·L·S·A·R·S·W·L·P·A·V·G·S·G·G·A·I·  
+2fr: N·S·A·V·Y·R·P·A·A·G·S·P·P·S·A·A·A·A·P·L·  
+3fr: T·A·P·F·I·G·P·Q·L·A·P·R·R·R·Q·R·R·R·H·C·

DNA: gcgctcgcatcaccatgggtgggggacgatatcatactggaggaggaggaactgcccgcagt  
+1fr: A·S·H·H·H·G·G·G·R·Y·H·T·G·G·G·G·T·A·R·S·  
+2fr: R·R·I·T·M·V·G·D·D·I·I·L·E·E·E·E·L·P·A·V·  
+3fr: V·A·S·P·W·W·G·T·I·S·Y·W·R·R·R·N·C·P·Q·C·

DNA: gcccgagtcggcagcggcgctgtcagtcagcaaaagtaaccaaactgcccatctacat  
+1fr: A·Q·S·D·G·D·G·A·V·S·Q·Q·S·N·Q·I·A·H·L·H·  
+2fr: P·S·P·T·A·T·A·L·S·V·S·K·V·T·K·S·P·I·Y·M·  
+3fr: P·V·R·R·R·R·R·C·Q·S·A·K·\*·P·N·R·P·S·T·\*·\*

DNA: gaacgtcaacagtcggaagagaaaccaatcttatagcgacaaggcttcgggtcaaggatgc  
+1fr: E·R·Q·Q·S·E·E·K·P·I·L·\*·R·Q·G·F·G·Q·G·C·  
+2fr: N·V·N·S·P·K·R·N·Q·S·Y·S·D·K·A·S·V·K·D·A·  
+3fr: T·S·T·V·R·R·E·T·N·L·I·A·T·R·L·R·S·R·M·H·

DNA: actgcagcaggcatctgtcccatccgaccagggcaaggatcagcaggatgctagcaagt  
+1fr: T·A·A·G·I·C·P·I·R·P·G·Q·G·S·A·G·C·\*·Q·S·  
+2fr: L·Q·Q·A·S·V·P·S·D·Q·G·K·D·Q·Q·D·A·S·K·V·  
+3fr: C·S·R·H·L·S·H·P·T·R·A·R·I·S·R·M·L·A·K·C·

DNA: gcccataaagtttccaaatccaaaagactaacgaaatgctttaattccaaatcgcgtaac  
+1fr: A·H·K·V·S·K·S·K·R·L·T·K·C·F·N·S·K·Y·R·N·  
+2fr: P·I·K·F·P·N·P·K·D·\*·R·N·A·L·I·P·N·I·V·T·

+3fr: ·P·\*·S·F·Q·I·Q·K·T·N·E·M·L·\*·F·Q·I·S·\*·L·

DNA: tgttacattccccccacgccccaccccaccaccttcctcc

+1fr: ·C·Y·I·P·P·T·P·H·P·T·T·F·L·

+2fr: ·V·T·F·P·P·R·P·T·P·P·P·S·S·

+3fr: ·L·H·S·P·H·A·P·P·H·H·L·P·