

# Eastern Mediterranean University

## Faculty of Arts and Sciences

### Molecular Biology and Genetics

#### BIOL312 Practical 3

- 1- Translate the following unknown sequence to amino acid sequence. Appropriately label amino acid sequences to indicate reading and open reading frames.

Unknown sequence:

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GGAGAGGTGGAGCCGGTTGCCGGGCGCGGAACATGAGGCAGTGTGCGCTCTTCCTGACCAGCTTGGTTCCATCGTG
CTGGCGCCGCGACCGCCGGACGAGCCGGGCTTCGGCTCCCCTCAGCGACTCGAAAAGCTTGATTCTCTGCTCTCAGA
CTACGACATCCTCTCTTTATCCAGCATTTCGCCAGCACTCCGTAAGGAAAAGGGATCTGCAGGCCTCAACACACCTAG
AGACACTACTAACTTTTTTCAGCCTTGAACAGGCATTTTTAAATTATACCTGACATCAAGTACTGAACGCTTCTCCAG
AATTTCAAAGTCGTGGTGGTTCGATGGGGAAGATGAAAGTGAGTACCCCGTCAAGTGGCAGGACTTCTTCAGTGGACA
CGTGGTTGGTGAACCTGACTCTAGGGTTCTCGCCACATAGGAGATGATGATATTACAGTAAGAATCAACACAGATG
GGGCAGAATATAATATAGAGCCACTTTGGAGACTAATTAATGATACTAAAGACAAAAGAGTGTAGTTTATAAGTCT
GAAGATATCAAGAATGTTTCACGTTTGCAGTCTCCAAAAGTGTGTGGTTATATAAAGGCGGATAATGAAGAGTTGCT
TCCTAAAGGGCTAGTAGACAGAGAGCCGCTGATGAGCTTGTTCCACGGGTGAAGAGAAGAGCCGACCCCAATCCCC
TGAGGAACACGTGTAAATTATTGGTGGTGGCAGATCATCGCTTTTATAAGTACATGGGCAGAGGGGAAGAGAGCAG
ACCACAACTACCTGATAGAGCTAATTGACAGAGTTGATGACATCTATCGGAACACTTCATGGGACAATGCAGGTTT
TAAAGGTTATGGAATACAGATAGAGCAGATTTCGATTCTCAAGTCTCCACAAGAGGTAAAACCTGGTGAAGGCACT
ACAATATGGCAAAAAGTTACCCAAATGAAGAAAAGGATGCTTGGGATGTGAAGATGTTGCTAGAGCAATTTAGCTTT
GATATAGCTGAAGAAGCATCTAAAGTCTGCCTGGCACATCTTTTACCTACCAAGATTTTGGATATGGGAACCTTTGG
ATTAGCTTATGTTGGTTCTCCCAGAGCAAACAGTCATGGAGGTGTTTGTCCAAAGGCTTATTATAGTCCAATTGGAA
AGAAAAATATCTATTTAAATAGTGGTTTGACCAGCACAAAAAATTATGGTAAAACCATCCTTACAAAGGAAGCTGAC
CTTGTGACAACTCATGAATTGGGGCACAATTTGGAGCAGAACACGATCCAGATGGTTTAGCAGAATGTGCCCCAAA
CGAGGACCAGGGAGGAAAATACGTCATGTATCCCATAGCCGTGAGTGGTGTATCATGAGAACAACAAGATGTTTTCAA
ACTGCAGTAAACGATCCATCTATAAGACCATTGAAAGTAAGGCCCCAGGAGTGTTCGAAAGCGCAGCAACAAGTG
TGTGGCACTCCAGGGTGGATGAGGGGGAGGAGTGCAGCCCGGCATCATGTACCTGAACAACGACACCTGCTGCAA
CAGCGCATGCACCCCTGAGGCCGGGCGTCCAGTGCAGTGTATAGGAACAGTCCTTGCTGTAAAAACTGTGAGTTGAGA
CGGCCCAGAAGAAGTGCCAGGAGGCTATTAATGCCACTTGCAAAGGCGTGTCTTACTGCACAGGTAACAGCAGTGAG
TGCCCCCTCCGGGAAACGCCGAGGACGACACGGTGTGCCTGGACCTGGGCAGGTGCAAGGACGGCAAGTGCCTGCC
CTTCTGCGAGCGGGAGCAGCGGCTGGAGTCCTGCGCGTGTAAACGAAACCGACCACTCGTGCAAGGTGTGCTGCCGGG
CCCCCTCGGGCCGTTGCCTGCCCTACGTGGACGCCGAACAGAAGAAGTGTGTTTTGAGGAAGGGGAAGCCCTGTACA
GTAGGATTTTGTGACATGAATGGCAAGTGTGAGAAGCGAGTGCAGGACGTCATCGAGCGGTTCTGGGAGTTCATTGA
CAAGCTGAGCATCAATACTTTCCGGGAAGTTCCTGGCAGACAACATCGTGGGCTCCGTCCTGGTGTCTCCCTGATGC
TCTGGATCCCCGTCAGCATCCTCGTCCACTGCGTGGATAAGAAGCTGGATAAGCAGTACGAATCCCTGTCTCTGCTG
CACCCCAGCAACGTGGAGATGCTAAGCAGCATGGATTTCAGCATCCGTTTCGCATCATCAAGCCCTTTCTGCGCCCA
GACCCCAGGCCGCTGCAGCCCCTGCAGCCCCTGCAGCCCCTGCAGCCCCTGCAGCCCCTGCAGCCCCTGCAGCCCCTGC
CTCCAAAAGTGGACCACCAGCGGATGGACACCATCCAGGAGGACCCAGCACGGACTCGCACGTGGACGAGGACGGC
TTCGAGAAGGACCCTTTCCCAACAGCAGTGCCTGCAAGTCAATTTGAGGATCTCACGGACCATCCGGTCCAGGAG
AAGTGAAAAGGCCTCGTCCTTTAAGCTGCAGCGCCAGAGTCGCGTTGACAGCAAGGAAACGGAGTGCTAGTTCAGGG
CTGCGTCCGGAGCTCTCGGACTTGGCGTGCAGGATATTTTTATAGATTTGACCTCAGATCACTGCGGAGATCTTGTG
AAGATTTGGGAGAAAAAAGGAAGTGACTTCCCAGCAGATGCTGGTTCATGAGTTTGGACTTCTCCACCTCCGTGAGA
CTGTGTGGGTAGCCCTTTTCTTTGAAGAGGTAAGGCGAACCTAGCTTACTTTGAGGCCTTCAGGTTTTAGTCTTTT
GATCTTTAAATATCTTTCAACCTGTGGTGCAGAA
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- 2- How did you determine which one is the correct reading frame?
- 3- What may be some of the consequences of using the wrong reading frame?
- 4- Do a BLASP search using RBP4 (NP\_006735.2), restricting the output to Arthropoda (taxid:6656) (insects). Next, do a BLASTN search using the RBP4 nucleotide sequence (NM\_006744.4), again restricting the output only for Arthropoda.
  - a. Write down the best matches for each search.
  - b. How many matches have an *E* value less than 1.0 in each search?
  - c. Which search is more informative?
- 5- Find the gene sequences of **Mouse origin** similar to **U80226.1** .

**Submission Deadline: 18.03.2020 - @23:00**