

Lab 05: Central Dogma I: Integrated pipeline for Building Web-based DNA Translation Tool

Your Task

To receive full credit for this lab, you must **answer** all following questions.

Task 1: Get protein sequence for DNA sequence

(https://www.ncbi.nlm.nih.gov/nuccore/NM_207618.2), and compare it with sequence on NCBI website. Do you get same results?

```
GGTCAGAAAAAGCCCTCTCCATGTCTACTCACGATACATCCCTGAAAACCACTGAGGAAGTGGC
TTTTCAGATCATCTTGCTTTGCCAGTTTGGGGTTGGGACTTTTGCCAATGTATTTCTCTTTGTC
TATAATTTCTCTCCAATCTCGACTGGTTCTAAACAGAGGCCAGACAAGTGATTTTAAGACACA
TGGCTGTGGCCAATGCCTTAACTCTCTTCCTCACTATATTTCCAAACAACATGATGACTTTTGC
TCCAATTATTCTCAAACCTGACCTCAAATGTAAATTAGAATTCTTCACTCGCCTCGTGGCAAGA
AGCACAAACTTGTGTTCAACTTGTGTTCTGAGTATCCATCAGTTTGTCACTTGTTCCTGTTA
ATTCAGGTAAAGGAATACTCAGAGCAAGTGTCAAAACATGGCAAGTTATTCTTGTTACAGTTG
TTGTTTCTTCAGTGTCTTAAATAACATCTACATTCCAATTAAGGTCAGTGGTCCACAGTTAACA
GACAATAACAATAACTCTAAAAGCAAGTTGTTCTGTTCCACTTCTGATTTTCAAGTGTAGGCATTG
TCTTCTTGAGGTTTGCCCATGATGCCACATTCATGAGCATCATGGTCTGGACCAGTGTCTCCAT
GGTACTTCTCCTCCATAGACATTGTCAGAGAATGCAGTACATATTCACTCTCAATCAGGACCCC
AGGGGCCAAGCAGAGACCACAGCAACCCATACTATCCTGATGCTGGTAGTCACATTTGTTGGCT
TTTATCTTCTAAGTCTTATTTGTATCATCTTTTACACCTATTTTATATATTCTCATCATTCCTT
GAGGCATTGCAATGACATTTTGGTTTTCGGGTTTCCCTACAATTTCTCCTTTACTGTTGACCTTC
AGAGACCCTAAGGGTCCTTGTTCTGTGTTCTTCAACTGTTGAAAGCCAGAGTCACTAAAAATGC
CAAACACAGAAGACAGCTTTGCTAATACCATTAAATACTTTATTCCATAAATATGTTTTTAAAA
GCTTGTATGAACAAGGTATGGTGCTCACTGCTATACTTATAAAAGAGTAAGGTTATAATCACTT
GTTGATATGAAAAGATTTCTGGTTGGAATCTGATTGAAACAGTGAGTTATTCACCACCCTCCAT
TCTCT
```

- Your Protein Sequence:

```
MSTHDTSLKTTEEVAFAQIILLCQFGVGTAFANVFLFVYNFSPISTGSKQRPRQVILRHMAV
ANALTLFLTIFPNNMMTFAPIIPQTDLKCKLEFFTRLVARSTNLCSTCVLSIHQFVTLVPV
NSGKGILRASVTNMA SYSCYSCWFFSVLNNIYIPIKVTGPQLTDNNNNSKSKLFCSTSDFS
VGIVFLRFAHDATFMSIMVWTSVSMVLLLRHRCQRMQYIFTLNQDPRGQAETTATHTIL
MLVVT FVG FYLLSLICIIFYTYFIYSHSLRHCNDILVSGFPTISPLLLTFRDPKGPCSVFFN
C
```

- NCBI's Protein Sequence:
- MSTHDTSLKTTEEVAFAQIILLCQFGVGTAFANVFLFVYNFSPIST
- GSKQRPRQVILRHMAVANALTLFLTIFPNNMMTFAPIIPQTDLKCKLEFFTRLVARST
- NLCSTCVLSIHQFVTLVPVNSGKGILRASVTNMA SYSCYSCWFFSVLNNIYIPIKVTG

- PQLTDNNNNNSKSLFCSTSDFSVGIVFLRFAHDATFMSIMVWTSVSMVLLLHRHCQRM
- QYIFTLNQDPRGQAETTATHTILMLVVTFVGFYLLSLICIIFYTYFIYSHSLRHCND
- ILVSGFPTISPLLLTFRDPKGPCSVFFNC

Task 2: Get protein sequence for DNA sequence

(https://www.ncbi.nlm.nih.gov/nucore/NM_008220.5), and compare it with sequence on NCBI website. Do you get same results?

```
TTACGTTTGCTTCTGATTCTGTTGTGTTGACTTGCAACCTCAGAAACAGACATCATGGTGCACC
TGACTGATGCTGAGAAGGCTGCTGTCTCTGGCCTGTGGGGAAAGGTGAACGCCGATGAAGTTGG
TGGTGAGGCCCTGGGCAGGCTGCTGGTTGTCTACCCTTGGACCCAGCGGTACTTTGATAGCTTT
GGAGACCTATCCTCTGCCTCTGCTATCATGGGTAATGCCAAAGTGAAGGCCCATGGCAAGAAAG
TGATAACTGCCTTTAACGATGGCCTGAATCACTTGGACAGCCTCAAGGGCACCTTTGCCAGCCT
CAGTGAGCTCCACTGTGACAAGCTGCATGTGGATCCTGAGAACTTCAGGCTCCTGGGCAATATG
ATCGTGATTGTGCTGGGCCACCACCTGGGCAAGGATTTACCCCCGCTGCACAGGCTGCCTTCC
AGAAGGTGGTGGCTGGAGTGGCTGCTGCCCTGGCTCACAAGTACCACTAAGCCCCCTTTTCTGCT
ATTGTCTATGCACAAAGGTTATATGTCCCCTAGAGAAAACTGTCAATTGTGGGGAAATGATGA
AGACCTTTGGGCATCTAGCTTTTATCTAATAAATGATATTTACTGTCATCTCAAAAAAAAAAAAA
AAAAAA
```

- Your Protein Sequence:

```
MVHLTDAEKAAVSGLWGKVNADGVGGEALGRLLVVYPWTQRYFDSFGDLSSASAIMG
NAKVKAHGKKVITAFNDGLNHLDSLKGTFASLSELHCDKLHVDPENFRLLGNMIVIVLG
HHLGKDFTPAQAQAFQKVVAGVAAALAHKYH
```

- NCBI's Protein Sequence:

```
MVHLTDAEKAAVSGLWGKVNADGVGGEALGRLLVVYPWTQRYFD
```

```
SFGDLSSASAIMGNAKVKAHGKKVITAFNDGLNHLDSLKGTFASLSELHCDKLHVDPE
NFRLGNMIVIVLGHHLGKDFTPAQAQAFQKVVAGVAAALAHKYH
```

Task 3: Get protein sequence for DNA sequence

(https://www.ncbi.nlm.nih.gov/nucore/NM_025580.2), and compare it with sequence on NCBI website. Do you get same results?

```
CGACGGGGAGCGCAGTGAAGGGGGGTGGGACCCGAACATGGCGGCGGTGGTAGCTGCTACGGCG
CTGAAGGGCCGGGGGGCGAGAAATGCCCGCGTCCTCCGGGGGATCCTCTCTGGAGCCACAGCTA
ACAAGGCTTCCCAGAACAGGACCAGAGCACTGCAGAGCCACAGCTCACCAGAATGCAAGGAGGA
GCCCGAGCCCCTCTCCCCTGAGCTAGAATACATTCCCAGAAAGAGGGGCAAGAACCCCATGAAA
GCCGTGGGGCTAGCCTGGGCCATCGGCTTCCCCTGTGGTATCCTCTTCTTCGTCCTCACCAAGC
AGGAAGTGGACAAGGACCGATTGAAGCAGATGAAAGCTCGTCAGAACATGCGGGTGTCCAACAC
GGGCGAGTATGAGAGCCAGAGGTTCAAGGGCTTCAACCCCAACAAGCCCAGTTCCCTGAGGTTGGG
TCTGGGGCCCAGACCTGAGTGAGGATCACTGCAACCTTGTGCTAGACTATTGACTGCCGTCTTG
TGTGGCCATGGCTCCTGAGGCCCACCAGAGGGCGCAGGATGCCCAAGCTGCTGCCAGCACCCAA
CTCTTCCACACCGTGGAAGGAGCCAAATGCAAATAAAGTTATTAAGTACTGACACGGAAAAAAA
AA
```

- Your Protein Sequence:

```
MAAVVAATALKGRGARNARVLRGILSGATANKASQNRTRALQSHSSPECKEEPEPLSPE
LEYIPRKRKGKNPMKAVGLAWAIGFPCGILFFVLTKQEVDKDRLKQMKARQNM RVSNTG
EYESQRF RASPQQAQFPEVGSGAQT
```

- NCBI's Protein Sequence:
- MAAVVAATALKGRGARNARVLRGILSGATANKASQNRTRALQSH
-
- SSPECKEEPEPLSPELEYIPRKRKGKNPMKAVGLAWAIGFPCGILFFVLTKQEVDKDRL
- KQMKARQNM RVSNTGEYESQRF RASPQQAQFPEVGSGAQT

Task 4: Get protein sequence for DNA sequence

(https://www.ncbi.nlm.nih.gov/nucore/NM_009735.3), and compare it with sequence on NCBI website. Do you get same results?

```
TTTCAGTGGCTGCTACTCGGCGCTTCAGTCGCGGTTCGCTTCAGTCGTCAGCATGGCTCGCTCGG
TGACCCTGGTCTTTCTGGTGCTTGTCTCACTGACCGGCCTGTATGCTATCCAGAAAACCCCTCA
AATTCAAGTATACTCACGCCACCCACCGGAGAATGGGAAGCCGAACATACTGAACTGCTACGTA
ACACAGTTCCACCCGCTCACATTGAAATCCAAATGCTGAAGAACGGGAAAAAAATTCCTAAAG
TAGAGATGTCAGATATGTCCTTCAGCAAGGACTGGTCTTTCTATATCCTGGCTCACACTGAATT
CACCCCCACTGAGACTGATACATACGCCTGCAGAGTTAAGCATGCCAGTATGGCCGAGCCCAAG
ACCGTCTACTGGGATCGAGACATGTGATCAAGCATCATGATGCTCTGAAGATTCATTTGAACCT
GCTTAATTACAAATCCAGTTTCTAATATGCTATACAATTTATGCACGCAGAAAGAAATAGCAAT
GTACACATCACCTTCTTTATATCTTACTTTAAATATTTTATGCATGTTTTCAAAAAATTGAAA
TATCCTAGATAGCTGAGCAATAAATCTTCAATAAGTATTTTGATCAGAATAATAAATATAATTT
TAAGAACAATAGTTGATCATATGCCAAACCCTCTGTACTTCTCATTACTTGGATGCAGTTACTC
ATCTTTGGTCTATCACAACATAAGTGACATACTTTCCTTTTGGTAAAGCAAAGAGGCCTAATTG
AAGTCTGTCACTGTGCCCAATGCTTAGCAATTCTACCCCCAACCCCTGTGGCTACTTCTGCTTT
TGTTACTTTTACTAAAAATAAAAAAC
```

- Your Protein Sequence:

MARSVTLVFLVLVSLTGLYAIQKTPQIQVYSRHPPENGKPNILNCYVTQFHPPHIEIQML
KNGKKIPKVEMSDMSFSKDWSFYILAHTFTPTETDTYACRVKHASMAEPKTVYWDRD
M

- NCBI's Protein Sequence:
- MARSVTLVFLVLVSLTGLYAIQKTPQIQVYSRHPPENGKPNILN
-
- CYVTQFHPPHIEIQMLKNGKKIPKVEMSDMSFSKDWSFYILAHTFTPTETDTYACRV
- KHASMAEPKTVYWDRDM

Task 5: Get protein sequence for DNA sequence

(https://www.ncbi.nlm.nih.gov/nucore/NM_011662), and compare it with sequence on NCBI website. Do you get same results?

```
GTCACACCAGGTCCCACCAGCCCCTGGACTGTGGTGTCCAGTGCATATCTGGCCACCATGGGGG
CTCTGGAGCCCTCCTGGTGCCTTCTGTTCCCTTCCTGTCCTCCTGACTGTGGGAGGATTAAGTCC
CGTACAGGCCCAGAGTGACACTTTCCTCAAGATGCGACTGTTCTTCCGTGAGCCCTGGTGTACTG
GCTGGGATTGTTCTGGGTGACTTGGTGTGACTCTGCTGATTGCCCTGGCTGTGTACTCTCTGG
GCCGCCTGGTCTCCCGAGGTCAAGGGACAGCGGAAGGGACCCGAAACAACACATTGCTGAGAC
TGAGTCGCCTTATCAGGAGCTTCAGGGTCAGAGACCAGAAGTATACAGTGACCTCAACACACAG
AGGCAATATTACAGATGAGCCCACTCTATGCCCATCAGCGGCCTGATGCCCCGATCCGGTCATT
CCAGATGCCTACTCAACAAGCCCTCTCTGGGATCAGGACTCCCGTTGGAATACAGATCCACAGG
GTACCTCCCTGAGATATCTGACATTGTACCATTCTGTCCCCAAATAAAAGACAGAGCAAAAAA
AAAAAAAAAAAAAAAAAAAA
```

- Your Protein Sequence:

MGALEPSWCLLFLPVLLTVGGLSPVQAQSDTFPRCDCSSVSPGVLAGIVLGDLVLTLLIA
LAVYSLGRLVSRGQGTAEGRKQHIATESPYQELQGQRPEVYSDLNTQRQYYR

- NCBI's Protein Sequence:
- MGALEPSWCLLFLPVLLTVGGLSPVQAQSDTFPRCDCSSVSPGV
-
- LAGIVLGDLVLTLLIALAVYSLGRLVSRGQGTAEGRKQHIATESPYQELQGQRPEV
- YSDLNTQRQYYR

Task 6: Give a brief overview of your work, discussing any thoughts, successes or challenges you faced.

My main challenge was properly implementing the code, other than that the rest of this lab was smooth and it was interesting to see my results from the webcode implementation.