

Fall 2006 Genomics Exam #1
Genomic Sequences

There is no time limit on this test, though I don't want you to spend too much time on it. I have tried to design an exam that will take much less time than exams in the past. You do not need to read any additional papers other than the ones I send to you. There are 2 pages, including this cover sheet, for this test. You will have to answer 6 Discovery Questions and 2 original questions. I expect the original questions will take you more time than the Discovery Questions. You are not allowed discuss the test with anyone until all exams are turned in at 11:30 am on Wednesday September 27. **PAPER COPIES OF YOUR EXAM ANSWERS ARE DUE AT CLASS TIME ON WEDNESDAY SEPTEMBER 27.** You may use a calculator, a ruler, your notes, the book, and the internet. You may take it in as many blocks of time as you want. Submit your paper and electronic version before 11:30 am (eastern time zone:-).

The **answers to the questions must be typed in a Word file and emailed to me as an attachment.** Be sure to backup your test answers just in case (I suggest a thumb drive or other removable medium). You will need to capture screen images as a part of your answers which you may do without seeking permission since your test answers will not be in the public domain. Remember to explain your thoughts in your own words and use screen shots to support your answers. **Screen shots without *your* words are worth very few points.**

DO NOT READ or DOWNLOAD ANY NEW PAPERS FOR THIS EXAM. RELY ONLY ON THE FIGURES PROVIDED IN THIS EXAM, YOUR EXPERIENCE, AND YOUR SKILLS.

-3 pts if you do not follow this direction.

Please do not write or type your name on any page other than this cover page.

Staple all your pages (INCLUDING THE TEST PAGES) together when finished with the exam.

Name (please print):

Write out the full pledge and sign:

How long did this exam take you to complete (excluding typing)?

For this part of your exam, answer these 6 Discovery Questions. Be sure your answers are supported with data and spell out your logic.

Chapter 2 #55

Chapter 2 #70

Chapter 2 #76

Chapter 3 #13

Chapter 3 #18

Chapter 3 #78

1) This question is one that requires some good detective work.

a. Use the protein sequence below and tell me where it came from. It is a perfect match to at least one sequence in the databases. Find that sequence. Support your answer with data/screen shots and tell me *how* you found your answer.

b. Tell me the interesting story behind this exact sequence.

gswnvilfvc feqlkqelme srqtvdcaa

2) Like the last question, this one requires that you think creatively to find the answers.

a. Use this sequence and tell me the name of the gene.

b. Find the paralog from the same species.

c. Describe the multi-species conservation of these two paralogs in other species. You must show data for your answer.

d. Tell me the interesting story behind these two genes.

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GCAAGCTGAAGCTCTGGTGAGAAATCTGCACCTAGATCTTGCACTATTCCAGACAGAGAATCTGACAATC
TGCTTCTCACACACACAGGTAATTTGGCTGACTTAAAAATCAGAAGAGAGCTTTGCTTTCTTTGCTATTGC
TTAGATTTTCATTTGGCAAATTTGCCAGCCCGTTCAAAGGGGGATATCTTGTCTCTCTGAAGACTCCATCT
GCACCAAATTTGTGGAGTCCCTCAACTCATGGAATGACTCAGGAGCGATTGCCACACTGATGGACCT
GCCCTTAGAGCCCCAACAAAGATGACAGTGAAGATGTTTCGTGGTGCTTTTCCACGGTGGACGTCCCA
GACCATGCCATTATACAATTGGAACAGTCATTTATCGTGGGGATCAGGAACTCTGGGTAATTTCC
TGGTCATCTATGCTTTCTGCAGGAGTAGGACCCCTCAGAAAACAGCCAATATATTCATCATCAATCTAGC
TGTTAGTGACTTCCCTTATGTCCATTACACAGTCTCCAGTATTTTTTACCAACAGTCTCCATAAACGTTGG
ATTTTGGTGAGAAAAGGCTGTGAGCTGTATGCCCTTTCGCGGAGCTCTTTTTGGCATTACATCCATGATCA
CTTTGATGGTGATTGCCTTGGACAGATACTTTGTTCATCACAAAACCTCTGGCTTCTGTTCCGAGTGATGTC
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CATCAGTCCGTGCCACACAATGCTGCTTTTCTGCTTTGTCTTCTTCATTCCCTTGATTGCTATCATATA
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TCGTCATCTTGCCTTATGTCAATTTCTGGTACCATACTCTGTTGTTGCCCTGGTAGCTTTTGTGGGTA
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AACCAGCCAGTCTTCTGAGACAAGTGGGCTGCAGAAAAGGAAAAGGGCACTATCTTCCATCTCTGATAGT
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CCTATGAAATGGGGGAAGATACAACCCAAACTAGTGACCTAGGAGGCAAACCTAAAGTGAAGCCATGA
TTCTGGGATTTTCCGGGAAGGCAGTTGTAGATGCAGATGAAATACCCATGGTGGAAATCAATGACACAGAG
CATTCTGTACATCTACTTGCAAAACATCTGAAAAATGCAATGTGGAGGAAATTCAGAGAAGTGAGAGCC
TGAGTGGTATTGGACTAAGAGAAGGAGAGTCTCGCCGTAGAACATCCGCATCTCAGATACCCAGCATTAT
AATAACATACAGCAATGTACAAGGAGTAGAGCTGCCCTCAGGATACAGTGTGGCTTCTTGCACCCAAAG
AACAAAAGCCACATACAGAAACAGAGCTCCAACAGCTGAGTGGCACAAGCCAGAAATATCATCTGCCAA
TCTCTGGAAGAGCTATTAACCAGCTGAATCCAGAAGACTTTCCCTACCTTGTCTGAAAACACTTCTACAGA
AACACAACACAAGACAAGCAAGAAT
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