Testing of work, bugs, errors, issues and future improvements.

Bug Fixes, Testing.

The CSS and cgi scripts where tested each time there were written to see that they performed correctly. I originally created the html file which was than converted to a cgi script. Small errors such as spelling, incorrect headings etc. where corrected as the pages where tested and any errors where noticed. Changes to html files where tracked on GitHub where possible. The first task I started on was the summary page. I created the webpage with a simple menu etc. and created a cgi script with perl code to retrieve data from a database using Andre's example from the database lectures and Adrian's database which we used for database management module and pulled the correct data. This worked correctly and the table was populated correctly as a cgi script.

As I added a menu bar and other style properties, I realised that cgi script would not load the external CSS file the same as the webpage loads CSS files. Where if the CSS file is in the same folder as the cgi script it will not load automatically. A possible solution was to have the CSS file within the cgi script however I also had to refer to pictures, which where used as a background logo for the menu bar. After trying various chmod commands and placing and referring the files in various file directories I manage to get it to work by linking it using the web referral link e.g. http://student.cryst.bbk.ac.uk/~pm001/css/codon2.css.

Whilst creating the creating the detail page I wanted to display the 4 requirements mentioned in the criteria on the same page. For this I thought it would be a good idea to have them in four frames. However on testing I realised these frames would be too small to view all the information for this reason I wanted a popup window which would enlarge the frame if maximised. For this I used a jquery which I found on the net and modified. As it would have been very difficult for me to write my own script as I have very limited programming experience. The first example I used worked however I realised I could not get it to embed the accession number into the address bar calling the link page as the link was placed in the java script file and I could not place a Perl variable within it. For this reason I had to find another workaround using a different java script example.

As well as java scripts the detail pages uses iframes to allow for over flow and a scroll bar. All the work I had done with the webpages had been tested on my pc using the latest Firefox and the frames where set according to my screen. A major problem I found was when this page was run another screen with a different resolution caused the frames to mover everywhere, this was a major issue and the size of the webpage had to be fixed within the body.

When the final links where added to the menu bar to combine mine and Yolanda pages the jquery properties where spilling over which was applying the CSS properties from the external jquery website. Therefore to the link files tag, rel="external" comment was added to stop this occurring.

Errors not resolved.

As I am using the jquery external link files to allow the popup window to work some of the properties are carried over to other tags, such as the submit button. This means if a submit button is placed on the page it expands fully. I was unable to stop this for this reason the search bar is not in the detail page I created.

Due to the layout of the frames I was also unable to get the footer to display correctly this was another issue I did not have time to correct.

Issues

A issue that occurred was with the nx server and problems which occurred with it. This was heightened over the Easter period when pc's had to be switched which included a number of forestations which also act as file servers, this cause the nx server to be best described as buggy. At the same time my PC stopped running the web version of nx due to a key issue. After trying to find a fix the only alternative was to load the webpage tool on a laptop and then remote onto it from my pc to use the nx server. I could not use the laptop as I find the PC more comfortable.

Future improvements.

For future development I would like to be able to have the accession number carried over into the sticky-end frame like it does for the other 3 frames and you could click on the search bar for the sticky-end which would update the page and give results for the sticky end selected.

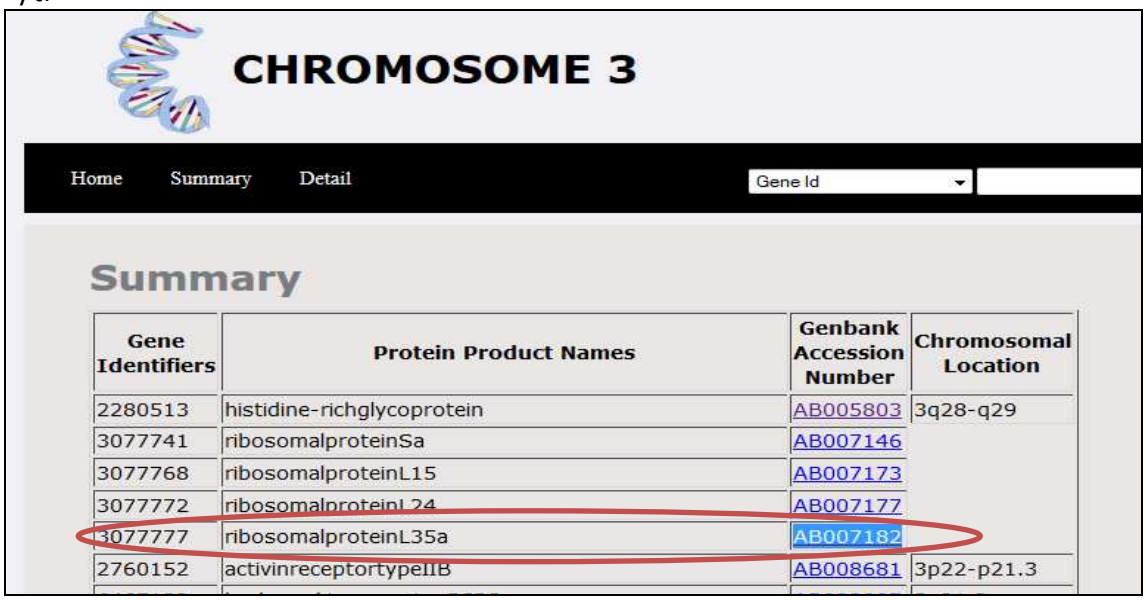
For the codon usage I would like to set the table with a better format more like the example given on Andrews's webpage I would also like to include an indication for codons that are over- or under-used. As well as display the full sequence with the different coding regions highlighted.

Testing of completed webpages.

The completed web pages were tested in the latest version of Firefox, Firefox (version 24 Pandora version) and internet explorer 10 and the pages where displayed correctly. They were also tested on different screen resolutions and tested fine. They were also tested on internet explorer 7 however the detail page did not work on this browser. To test the completed webpages I created Perl scripts to call the four subroutines these are explained in detail in the code comment file. The results file where used to compare the results created by the middle layer code matched what was being displayed on the webpage. Results are as follows;

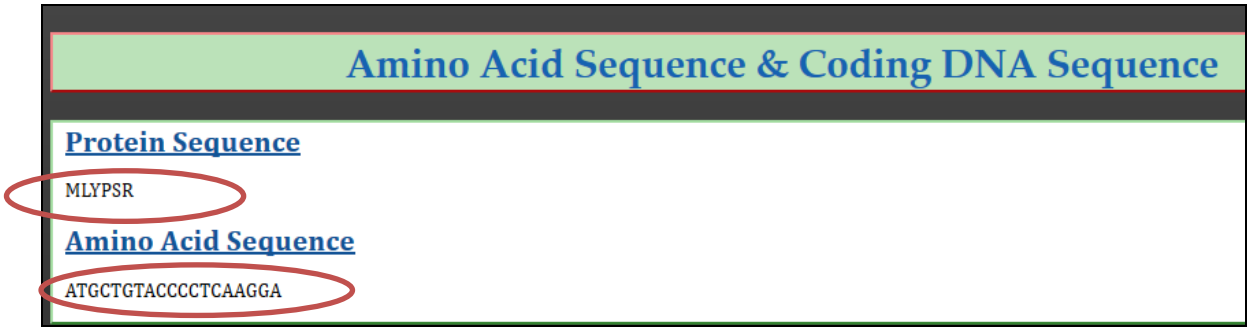
Summary test 1:

<tr><td>3077777</td><td>ribosomalproteinL35a</td><td>AB007182</td><td></td></tr>



Amino acid test 1:

For AB007182 Amino Acid and Coding Protein MLYPSR <p1>Amino Acid Sequence
</p1> ATGCTGTACCCCTCAAGGA



Single frequency test 1:

Accession number is AB007182 Codon is AUG Frequency is 16.6666666666667
Accession number is AB007182 Codon is CUG Frequency is 16.6666666666667
Accession number is AB007182 Codon is CCC Frequency is 16.6666666666667
Accession number is AB007182 Codon is UCA Frequency is 16.6666666666667

CUA	Leu (F)	0.741116615700 99		CAA	Gln (G)	1.25522453830438
CUG	Leu (F)	5.16110940483662	16.6666666666667	CAG	Gln (G)	2.89769920012819
AUU	Ile (I)	1.34068663452936		AAU	Asn (A)	1.63579793555624
AUC	Ile (I)	2.59724651808725		AAC	Asn (A)	2.31415332434201
AUA	Ile (I)	0.638295031180312		AAA	Lys (L)	2.05776703566707
AUG	Met (M)	2.13121102461041	16.6666666666667	AAG	Lys (L)	2.68404395956575
GUU	Val (V)	0.930735641700162		GAU	Asp (A)	1.76666177040074
GUC	Val (V)	1.73327813906285		GAC	Asp (A)	2.37557920600371
GUA	Val (V)	0.523455339377996		GAA	Glu (G)	1.94960407013233
GUG	Val (V)	3.11001909543713		GAG	Glu (G)	2.94844231976177
UCU	Ser (S)	1.48623926716252		UGU	Cys (C)	0.90269339137634
UCC	Ser (S)	1.72393072228825		UGC	Cys (C)	1.60107895896484
UCA	Ser (S)	0.651648483715465		UGA	STOP	0.134869870605045
UCC	Ser (S)	1.72393072228825		UGG	Trp (T)	1.50760479121877
UCA	Ser (S)	1.135043465488	16.6666666666667	CGU	Arg (A)	0.515443267856904
UCG	Ser (S)	0.4713768744909		CGC	Arg (A)	1.2832667886282
CCU	Pro (P)	1.70523588873903		CGA	Arg (A)	0.574198459011577
CCC	Pro (P)	2.0951567027655	16.6666666666667	CGG	Arg (A)	0.930735641700162
CCA	Pro (P)	1.4141306234727		AGU	Ser (S)	1.15373829903722

Summary test 2:

<tr><td>7363341</td><td>chemokinereceptor</td><td>AF193507</td><td>3q22</td></tr>

8547212	HMGboxtranscriptionfactor	AF193436	D3S1576
7363341	chemokinereceptor	AF193507	3q22
11119726	beadedfilamentcomponentprotein	AF195044	3q21-q22; between D3S1290 and D3S1615

Amino acid test 2:

For AF193507 Amino Acid and Coding Protein

MALEQNQSTDYYYEENEMNGTYDYSQYELICIKEDVREFAKVFLPVFLTIVFVIGLAGNSMV
VAIYAYYKKQRTKTDVYILNLAVADLLLLFTLPFWAVNAVHGWVLGKIMCKITSALYTLNFVSGM
QFLACISIDRYVAVTKVPSQSGVGKPCWIICFCVWMAAILLSIPQLVFYTVNDNARCIPIFPRYLGT
SMKALIQMLEICIGFVVPFLIMGVCYFITARTLMKMPNIKISRPLKVLLTVVIVFIVTQLPYNIVKFC
RAIDIIYSLITSCNMSKRMDIAIQVTESIALFHSCLNPILYVFMGASFKNYVMKVAKKYGSWRRQR
QSVEEFPFDSEGPTEPTSTFSI <p1>Amino Acid Sequence

Amino Acid Sequence & Coding DNA Sequence

Protein Sequence

MALEQNQSTDYYYEENEMNGTYDYSQYELICIKEDVREFAKVFLPVFLTIVFVIGLAGNSMVVAIYAYYKKQRTKTDVYILNLAVADLLLLFTLPFWAVNAVHGWVLGKIMCKITSALYTLNFVS
GMQFLACISIDRYVAVTKVPSQSGVGKPCWIICFCVWMAAILLSIPQLVFYTVNDNARCIPIFPRYLGTSMKALIQMLEICIGFVVPFLIMGVCYFITARTLMKMPNIKISRPLKVLLTVVIVFIVTQ
LPYNIVKFCRAIDIIYSLITSCNMSKRMDIAIQVTESIALFHSCLNPILYVFMGASFKNYVMKVAKKYGSWRRQRQSVEEFPFDSEGPTEPTSTFSI

Amino Acid Sequence

ATGGCTTTGGAACAGAACCAGTCAACAGATTATTATTATGAGGAAAATGAAATGAATGGCACTTATGACTACAGTCAATATGAACTGATCTGTATCAAAGAAGATGTCAGAGAATTTGCAAAA
GTTTTCCTCCCTGTATTCCTCACAATAGTTTTCGTCATTGGACTTGCAGGCAATTCCATGGTAGTGGCAATTTATGCCTATTACAAGAAACAGAGAACCAAAACAGATGTGTACATCCTGAATT
TGGCTGTAGCAGATTTACTCCTTCTATTCACTCTGCCTTTTTGGGCTGTTAATGCAGTTCATGGGTGGGTTTTAGGGAAAATAATGTGCAAAATAACTTCAGCCTTGTACACACTAAACTTTGT
CTCTGGAATGCAGTTTCTGGCTTGTATCAGCATAGACAGATATGTGGCAGTAACTAAAGTCCCCAGCCAATCAGGAGTGGGAAAACCATGCTGGATCATCTGTTTCTGTGTCTGGATGGCTGCC
ATCTTGCTGAGCATACCCCAGCTGGTTTTTTATACAGTAAATGACAATGCTAGGTGCATTCCCATTTTCCCCCGCTACCTAGGAACATCAATGAAAGCATTGATTCAAATGCTAGAGATCTGCA
TTGGATTTGTAGTACCCTTTCTTATTATGGGGGTGTGCTACTTTATCACAGCAAGGACACTCATGAAGATGCCAAACATTAAAATATCTCGACCCCTAAAAGTTCTGCTCACAGTCGTTATAGT
TTTCATTGTCACTCAACTGCCTTATAACATTGTCAAGTTCTGCCGAGCCATAGACATCATCTACTCCCTGATCACCAGCTGCAACATGAGCAAACGCATGGACATCGCCATCCAAGTCACAGAA
AGCATCGCACTCTTTCACAGCTGCCTCAACCCAATCCTTTATGTTTTTATGGGAGCATCTTTCAAAAACTACGTTATGAAAGTGGCCAAGAAATATGGGTCCTGGAGAAGACAGAGACAAAGT
GTGGAGGAGTTTCCTTTTGATTCTGAGGGTCCTACAGAGCCAACCAGTACTTTTAGCATTTAA

Single frequency test 2:

Accession number is AF193507 Codon is CUU Frequency is 1.13960113960114
Accession number is AF193507 Codon is CUG Frequency is 2.56410256410256
Accession number is AF193507 Codon is AAC Frequency is 1.99430199430199
Accession number is AF193507 Codon is CUA Frequency is 1.42450142450142

Codon Frequency Results

Codon	Amino Acid	Total Frequency (%)	Frequency For AF193507 (%)
UUU	Phe (F)	2.06	3.7
UUC	Phe (F)	2.87	2.56
UUA	Leu (F)	0.65	0.57
UUG	Leu (F)	1.22	1.42
CUU	Leu (F)	1.42	1.14
CUC	Leu (F)	2.64	1.99
CUA	Leu (F)	0.74	1.42
CUG	Leu (F)	5.16	2.56
AUU	Ile (I)	1.34	3.13
AUC	Ile (I)	2.6	4.56
AUA	Ile (I)	0.64	2.28
AUG	Met (M)	2.13	4.27
GUU	Val (V)	0.93	3.13
GUC	Val (V)	1.73	2.56

Codon	Amino Acid	Total Frequency (%)	Frequency For AF193507 (%)
UAU	Tyr (Y)	1.3	3.42
UAC	Tyr (Y)	1.74	2.28
UAA	STOP	0.08	0.28
UAG	STOP	0.08	
CAU	His (H)	1.1	0.28
CAC	His (H)	1.8	0.28
CAA	Gln (G)	1.26	1.71
CAG	Gln (G)	2.9	1.71
AAU	Asn (A)	1.64	1.99
AAC	Asn (A)	2.31	1.99
AAA	Lys (L)	2.06	4.27
AAG	Lys (L)	2.68	1.14
GAU	Asp (A)	1.77	1.42
GAC	Asp (A)	2.38	1.42
GAA	Glu (G)	1.95	1.99

Summary test 3:

<tr><td>11119726</td><td>beadedfilamentcomponentprotein</td><td>AF195044</td><td>3q21-q22; between D3S1290 and D3S1615</td></tr>

8547212	HMGboxtranscriptionfactor	AF193436	D3S1576
7363341	chemokinereceptor	AF193507	3q22
11119726	beadedfilamentcomponentprotein	AF195044	3q21-q22; between D3S1290 and D3S1615
11119725	beadedfilamentcomponentprotein	AF195849	3q21-q22; between D3S1290 and D3S1615

Amino acid test 3:

For AF195044 Amino Acid and Coding Protein

<p>VGEAVLENARLMLQTETIQAGADDFKERYENEQPFRKAAEEEINSLYKVIDEANLTKMDLES QIESLKEELGSLSRNYEEDVKLLHKQLAGCELEQMDAPIGTGLDDILETIRIQWERDVEKNRVEAG ALLQAKQQAEVAHMSQTQEEKLAAALRVELHNTSCQVQSLQAETESLRALKRGLENTLHDAKH WHDMELQNLGAVVGRLEAELREIRAEAEQQQQERAHLLARKCQLQKDVASYHALLDREESG</ p><p1>Amino Acid Sequence

Amino Acid Sequence & Coding DNA Sequence

Protein Sequence

VGEAVLENARLMLQTETIQAGADDFKERYENEQPFRKAAEEEINSLYKVIDEANLTKMDLESQIESLKEELGSLSRNYEEDVKLLHKQLAGCELEQMDAPIGTGLDDILETIRIQWERDVEKNR
VEAGALLQAKQQAEVAHMSQTQEEKLAAALRVELHNTSCQVQSLQAETESLRALKRGLENTLHDAKHWHDMELQNLGAVVGRLEAELREIRAEAEQQQQERAHLLARKCQLQKDVASYHA
LLDREESG

Amino Acid Sequence

GTGGGTGAGGCAGTCTTGGAAAATGCCCGGCTCATGCTGCAGACAGAAACTATCCAGGCCGGAGCAGATGACTTTAAAGAGAGATATGAAAATGAGCAGCCATTTCGAAAGGCAGCAGAAGA
GGAAATTAACTCTCTGTATAAAGTCATTGATGAGGCTAATTTGACTAAAATGGACCTGGAGAGTCAAATAGAAAGTCTGAAAGAAGAACTTGGCTCTCTATCAAGAAACTATGAAGAGGATGT
GAAGCTGCTGCACAAACAGTTGGCAGGGTGTGAGCTGGAACAAATGGATGCTCCCATTGGCACTGGTCTGGACGACATCCTTGAGACGATCAGAATTCAGTGGGAGAGAGATGTTGAAAAGA
ACCGGGTGGAGGCAGGAGCCCTGCTCCAAGCTAAGCAACAGGCGGAGGTGGCCCACATGTCCCAGACCCAGGAGGAGAAGCTGGCAGCTGCCCTCAGGGTGGAGTTACACAACACTTCGTGCC
AAGTCCAGAGCCTCCAGGCTGAGACAGAATCCTTACGTGCCCTGAAACGAGGCCTGGAGAACACCTTGCACGATGCCAAGCACTGGCATGACATGGAGCTCCAGAACCTGGGCGCTGTGGTCG
GCCGGCTGGAGGCGGAGCTCAGGGAAATCCGAGCGGAGGCGGAGCAGCAGCAACAGGAGCGCGCGCATCTGCTGGCCCGCAAGTGCCAGCTGCAGAAGGACGTGGCGTCCTACCACGCCCTGC
TGGACAGGGAGGAGAGCGGCTGA

Single frequency test 3:

Accession number is AF195044 Codon is CUG Frequency is 7.5098814229249
Accession number is AF195044 Codon is UUA Frequency is 0.790513833992095
Accession number is AF195044 Codon is CAU Frequency is 0.790513833992095
Accession number is AF195044 Codon is GUC Frequency is 1.58102766798419

Codon Frequency Results

Codon	Amino Acid	Total Frequency (%)	Frequency For AF195044 (%)	Codon	Amino Acid	Total Frequency (%)	Frequency For AF195044 (%)
UUU	Phe (F)	2.06	0.79	UAU	Tyr (Y)	1.3	1.19
UUC	Phe (F)	2.87		UAC	Tyr (Y)	1.74	0.4
UUA	Leu (F)	0.65	0.79	UAA	STOP	0.08	
UUG	Leu (F)	1.22	1.58	UAG	STOP	0.08	
CUU	Leu (F)	1.42	0.79	CAU	His (H)	1.1	0.79
CUC	Leu (F)	2.64	2.37	CAC	His (H)	1.8	2.37
CUA	Leu (F)	0.74	0.4	CAA	Gln (G)	1.26	2.37
CUG	Leu (F)	5.16	7.51	CAG	Gln (G)	2.9	6.32
AUU	Ile (I)	1.34	1.58	AAU	Asn (A)	1.64	1.19
AUC	Ile (I)	2.6	1.58	AAC	Asn (A)	2.31	2.37
AUA	Ile (I)	0.64	0.4	AAA	Lys (L)	2.06	2.37
AUG	Met (M)	2.13	1.98	AAG	Lys (L)	2.68	3.16
GUU	Val (V)	0.93	0.4	GAU	Asp (A)	1.77	2.37
GUC	Val (V)	1.73	1.58	GAC	Asp (A)	2.38	2.77
				GAA	Glu (G)	1.95	5.14

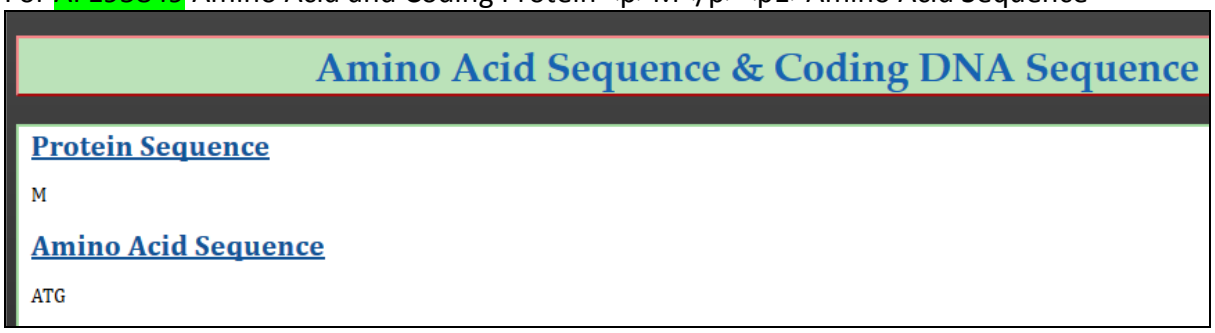
Summary test 4:

<tr><td>11119725</td><td>beadedfilamentcomponentprotein</td><td>AF195849</td><td>3q21-q22; between D3S1290 and D3S1615</td></tr>

8547212	HMGboxtranscriptionfactor	AF193436	D3S1576
7363341	chemokinereceptor	AF193507	3q22
11119726	beadedfilamentcomponentprotein	AF195044	3q21-q22; between D3S1290 and D3S1615
11119725	beadedfilamentcomponentprotein	AF195849	3q21-q22; between D3S1290 and D3S1615

Amino acid test 4:

For AF195849 Amino Acid and Coding Protein M <p1>Amino Acid Sequence



Single frequency test 4:

Accession number is AF195849 Codon is AUG Frequency is 100

AUA	Ile (I)	0.64	
AUG	Met (M)	2.13	100
GUU	Val (V)	0.93	

Summary test 5:

<tr><td>16566334</td><td>Gprotein-coupledreceptor</td><td>AF411113</td><td></td></tr>

29501385	voltage-gatedsodiumchannelNAV1.9	AF399967	3p24-p21
16566334	Gprotein-coupledreceptor	AF411113	
17901943	H963	AF411849	3q21-q25

Amino acid test 5:

For AF411113 Amino Acid and Coding Protein

MNTTVMQGFNRSERCPRDTRIVQLVFPALYTVVFLTGILLNTLALWVFVHIPSSSTFIIYLKNT LVADLIMTLMLPFKILSDSHLAPWQLRAFVCRFSSVIFYETMYVGIVLLGLIAFDRFLKIIRPLRNIFL KKPVFAKTVSIFIWFFLFFISLPNMILSNKEATPSSVKKCASLKGPLGLKWHQMVNNICQFIFWTV FILMLVFYVVIAKKVYDSYRKSKSKDRKNNKKLEGKVFVVVAVFFVCFAPFHFARVPYTHSQTNN KTDCRLQNQLFIAKETTLFLAATNICMDPLIYIFLCKKFTEKLPCMQGRKTTASSQENHSSQTDNI TLG <p1>Amino Acid Sequence

Amino Acid Sequence & Coding DNA Sequence

Protein Sequence

MNTTVMQGFNRSERCPRDTRIVQLVFPALYTVVFLTGILLNTLALWVFVHIPSSSTFIIYLKNTLVADLIMTLMLPFKILSDSHLAPWQLRAFVCRFSSVIFYETMYVGIVLLGLIAFDRFLKIIRPL
RNIFLKKPVFAKTVSIFIWFFLFFISLPNMILSNKEATPSSVKKCASLKGPLGLKWHQMVNNICQFIFWTVFILMLVFYVVIAKKVYDSYRKSKSKDRKNNKKLEGKVFVVVAVFFVCFAPFHFA
RVPYTHSQTNNKTDCRLQNQLFIAKETTLFLAATNICMDPLIYIFLCKKFTEKLPCMQGRKTTASSQENHSSQTDNITLG

Amino Acid Sequence

ATGAACACCACAGTGATGCAAGGCTTCAACAGATCTGAGCGGTGCCCCAGAGACACTCGGATAGTACAGCTGGTATTCCCAGCCCTCTACACAGTGGTTTTCTTGACCGGCATCCTGCTGAATA
CTTTGGCTCTGTGGGTGTTTGTTCACATCCCCAGCTCCTCCACCTTCATCATCTACCTCAAAAACACTTTGGTGGCCGACTTGATAATGACACTCATGCTTCCTTTCAAAATCCTCTCTGACTC
ACACCTGGCACCCTGGCAGCTCAGAGCTTTTGTGTGTCGTTTTTCTTCGGTGATATTTTATGAGACCATGTATGTGGGCATCGTGCTGTTAGGGCTCATAGCCTTTGACAGATTCCTCAAGATC
ATCAGACCTTTGAGAAATATTTTTCTAAAAAAACCTGTTTTTGCAAAAACGGTCTCAATCTTCATCTGGTTCTTTTTGTTCTTCATCTCCCTGCCAAATATGATCTTGAGCAACAAGGAAGCA
ACACCATCGTCTGTGAAAAAGTGTGCTTCCTTAAAGGGGCCTCTGGGGCTGAAATGGCATCAAATGGTAAATAACATATGCCAGTTTATTTTCTGGACTGTTTTTATCCTAATGCTTGTGTTTT
ATGTGGTTATTGCAAAAAAAGTATATGATTCTTATAGAAAGTCCAAAAGTAAGGACAGAAAAAACAACAAAAAGCTGGAAGGCAAAGTATTTGTTGTCGTGGCTGTCTTCTTTGTGTGTTTT
GCTCCATTTCATTTTGCCAGAGTTCCATATACTCACAGTCAAACCAACAATAAGACTGACTGTAGACTGCAAAATCAACTGTTTATTGCTAAAGAAACAACTCTCTTTTTGGCAGCAACTAAC
ATTTGTATGGATCCCTTAATATACATATTCTTATGTAAAAAATTCACAGAAAAGCTACCATGTATGCAAGGGAGAAAGACCACAGCATCAAGCCAAGAAAATCATAGCAGTCAGACAGACAACA
TAACCTTAGGCTGA

Single frequency test 5:

Accession number is AF411113 Codon is UAU Frequency is 1.79640718562874
Accession number is AF411113 Codon is UUA Frequency is 1.49700598802395
Accession number is AF411113 Codon is CUA Frequency is 0.898203592814371
Accession number is AF411113 Codon is CAA Frequency is 2.09580838323353

Codon Frequency Results

Codon	Amino Acid	Total Frequency (%)	Frequency For AF411113 (%)	Codon	Amino Acid	Total Frequency (%)	Frequency For AF411113 (%)
UUU	Phe (F)	2.06	5.39	UAU	Tyr (Y)	1.3	1.8
UUC	Phe (F)	2.87	4.19	UAC	Tyr (Y)	1.74	0.9
UUA	Leu (F)	0.65	1.5	UAA	STOP	0.08	
UUG	Leu (F)	1.22	2.4	UAG	STOP	0.08	
CUU	Leu (F)	1.42	0.6	CAU	His (H)	1.1	0.9
CUC	Leu (F)	2.64	2.4	CAC	His (H)	1.8	0.9
CUA	Leu (F)	0.74	0.9	CAA	Gln (G)	1.26	2.1
CUG	Leu (F)	5.16	3.59	CAG	Gln (G)	2.9	1.2
AUU	Ile (I)	1.34	1.5	AAU	Asn (A)	1.64	2.1
AUC	Ile (I)	2.6	3.89	AAC	Asn (A)	2.31	2.99
AUA	Ile (I)	0.64	2.4	AAA	Lys (L)	2.06	4.79
AUG	Met (M)	2.13	2.99	AAG	Lys (L)	2.68	2.99
				GAU	Asp (A)	1.77	0.6

Total frequency test:

Codon is GCC Frequency = 3.06728804732464

GCC	Ala (A)	3.06728804732464

Codon is UAA Frequency = 0.0774500247038872

UAA	STOP	0.0774500247038872

Codon is CGU Frequency = 0.515443267856904

CGU	Arg (A)	0.515443267856904