C.reinhardtii Low Expression

CAI Analyzer: 12.03.2012

Reference set:

ORF1995(hypothetical protein)
168087~162100 Length:5988

ORF2971(hypothetical protein)
177167~186082 Length:8916

Codon frequency of reference set:

ORF1995(hypothetical protein)

Gene analysis...

Sequence length: 5988   Number of protein genes: 1   Total codons: 1996

Amino acid	Codon	Number	Frequency									
Phe	UUU	86	43.1	Ser	UCU	31	15.5	Tyr	UAU	73	36.6	Cys	UGU	4	2.0

Amino acid | Codon | Number | Frequency per thousand

Amino acid	Codon	Number	Freq	AA	Codon	Number	Freq	AA	Codon	Number	Freq	AA	Codon	Number	Freq
Phe	UUU	86	43.1	Ser	UCU	31	15.5	Tyr	UAU	73	36.6	Cys	UGU	4	2.0
	UUC	19	9.5		UCC	3	1.5		UAC	9	4.5		UGC	0	0.0
Leu	UUA	185	92.7		UCA	67	33.6	STOP	UAA	1	0.5	STOP	UGA	0	0.0
	UUG	8	4.0		UCG	8	4.0		UAG	0	0.0	Trp	UGG	30	15.0
Leu	CUU	18	9.0	Pro	CCU	20	10.0	His	CAU	27	13.5	Arg	CGU	92	46.1
	CUC	0	0.0		CCC	1	0.5		CAC	1	0.5		CGC	4	2.0
	CUA	13	6.5		CCA	59	29.6	Gln	CAA	98	49.1		CGA	7	3.5
	CUG	1	0.5		CCG	1	0.5		CAG	6	3.0		CGG	2	1.0
ile	AUU	99	49.6	Thr	ACU	55	27.6	Asn	AAU	149	74.6	Ser	AGU	42	21.0
	AUC	8	4.0		ACC	6	3.0		AAC	19	9.5		AGC	6	3.0
	AUA	17	8.5		ACA	99	49.6	Lys	AAA	182	91.2	Arg	AGA	20	10.0
Met	AUG	31	15.5		ACG	15	7.5		AAG	7	3.5		AGG	0	0.0
Val	GUU	41	20.5	Ala	GCU	38	19.0	Asp	GAU	56	28.1	Gly	GGU	39	19.5
	GUC	1	0.5		GCC	8	4.0		GAC	7	3.5		GGC	6	3.0
	GUA	33	16.5		GCA	26	13.0	Glu	GAA	67	33.6		GGA	17	8.5
	GUG	9	4.5		GCG	5	2.5		GAG	6	3.0		GGG	8	4.0

0 unidentified codons.

Nucleotide frequency: A=2354   U=1963   G=781   C=890   X=0

GC Content: 27.91%   1st letter GC: 35.92%   2nd letter GC: 36.02%   3rd letter GC: 11.77%

ORF2971(hypothetical protein)

Gene analysis...

Sequence length: 8916   Number of protein genes: 1   Total codons: 2972

Amino acid | Codon | Number | Frequency per thousand

Phe	UUU	145	48.8	Ser	UCU	66	22.2	Tyr	UAU	100	33.6	Cys	UGU	7	2.4
	UUC	25	8.4		UCC	17	5.7		UAC	12	4.0		UGC	4	1.3
Leu	UUA	250	84.1		UCA	89	29.9	STOP	UAA	0	0.0	STOP	UGA	0	0.0
	UUG	16	5.4		UCG	16	5.4		UAG	1	0.3	Trp	UGG	34	11.4
Leu	CUU	48	16.2	Pro	CCU	41	13.8	His	CAU	48	16.2	Arg	CGU	51	17.2
	CUC	5	1.7		CCC	8	2.7		CAC	10	3.4		CGC	5	1.7
	CUA	28	9.4		CCA	58	19.5	Gln	CAA	143	48.1		CGA	17	5.7
	CUG	6	2.0		CCG	3	1.0		CAG	12	4.0		CGG	0	0.0
ile	AUU	117	39.4	Thr	ACU	74	24.9	Asn	AAU	245	82.4	Ser	AGU	76	25.6
	AUC	20	6.7		ACC	21	7.1		AAC	63	21.2		AGC	22	7.4
	AUA	54	18.2		ACA	108	36.3	Lys	AAA	261	87.8	Arg	AGA	22	7.4
Met	AUG	50	16.8		ACG	8	2.7		AAG	29	9.8		AGG	4	1.3
Val	GUU	48	16.2	Ala	GCU	48	16.2	Asp	GAU	77	25.9	Gly	GGU	45	15.1
	GUC	6	2.0		GCC	14	4.7		GAC	16	5.4		GGC	13	4.4
	GUA	59	19.9		GCA	41	13.8	Glu	GAA	96	32.3		GGA	25	8.4
	GUG	13	4.4		GCG	8	2.7		GAG	9	3.0		GGG	15	5.0

0 unidentified codons.

Nucleotide frequency: A=3547 U=2908 G=1097 C=1364 X=0

GC Content: 27.6%   1st letter GC: 34.19%   2nd letter GC: 32.3%   3rd letter GC: 16.32%

Summary table:

Sequence length: 14904   Number of protein genes: 2   Total codons: 4968

Amino acid | Codon | Number | Frequency per thousand

Phe	UUU	231	46.5	Ser	UCU	97	19.5	Tyr	UAU	173	34.8	Cys	UGU	11	2.2
	UUC	44	8.9		UCC	20	4.0		UAC	21	4.2		UGC	4	0.8
Leu	UUA	435	87.6		UCA	156	31.4	STOP	UAA	1	0.2	STOP	UGA	0	0.0
	UUG	24	4.8		UCG	24	4.8		UAG	1	0.2	Trp	UGG	64	12.9
Leu	CUU	66	13.3	Pro	CCU	61	12.3	His	CAU	75	15.1	Arg	CGU	143	28.8
	CUC	5	1.0		CCC	9	1.8		CAC	11	2.2		CGC	9	1.8
	CUA	41	8.3		CCA	117	23.6	Gln	CAA	241	48.5		CGA	24	4.8
	CUG	7	1.4		CCG	4	0.8		CAG	18	3.6		CGG	2	0.4
ile	AUU	216	43.5	Thr	ACU	129	26.0	Asn	AAU	394	79.3	Ser	AGU	118	23.8
	AUC	28	5.6		ACC	27	5.4		AAC	82	16.5		AGC	28	5.6
	AUA	71	14.3		ACA	207	41.7	Lys	AAA	443	89.2	Arg	AGA	42	8.5
Met	AUG	81	16.3		ACG	23	4.6		AAG	36	7.2		AGG	4	0.8
Val	GUU	89	17.9	Ala	GCU	86	17.3	Asp	GAU	133	26.8	Gly	GGU	84	16.9
	GUC	7	1.4		GCC	22	4.4		GAC	23	4.6		GGC	19	3.8
	GUA	92	18.5		GCA	67	13.5	Glu	GAA	163	32.8		GGA	42	8.5
	GUG	22	4.4		GCG	13	2.6		GAG	15	3.0		GGG	23	4.6

0 unidentified codons.

Nucleotide frequency: A=5901 U=4871 G=1878 C=2254 X=0

GC Content: 27.72%   1st letter GC: 34.88%   2nd letter GC: 33.8%   3rd letter GC: 14.49%

Weight table from reference set:

Amino acid	Codon	Weight									
Phe	UUU	1	Ser	UCU	0.622	Tyr	UAU	1	Cys	UGU	1
	UUC	0.19		UCC	0.128		UAC	0.121		UGC	0.364
Leu	UUA	1		UCA	1	STOP	UAA	---	STOP	UGA	---
	UUG	0.055		UCG	0.154		UAG	---	Trp	UGG	---
Leu	CUU	0.152	Pro	CCU	0.521	His	CAU	1	Arg	CGU	1
	CUC	0.011		CCC	0.077		CAC	0.147		CGC	0.063
	CUA	0.094		CCA	1	Gln	CAA	1		CGA	0.168
	CUG	0.016		CCG	0.034		CAG	0.075		CGG	0.014
ile	AUU	1	Thr	ACU	0.623	Asn	AAU	1	Ser	AGU	0.756
	AUC	0.13		ACC	0.13		AAC	0.208		AGC	0.179
	AUA	0.329		ACA	1	Lys	AAA	1	Arg	AGA	0.294
Met	AUG	---		ACG	0.111		AAG	0.081		AGG	0.028
Val	GUU	0.967	Ala	GCU	1	Asp	GAU	1	Gly	GGU	1
	GUC	0.076		GCC	0.256		GAC	0.173		GGC	0.226
	GUA	1		GCA	0.779	Glu	GAA	1		GGA	0.5
	GUG	0.239		GCG	0.151		GAG	0.092		GGG	0.274