

Expression of a *Malassezia* codon optimized mCherry fluorescent protein in a bicistronic vector

Supplementary material

Amino Acid	Codon	Frequency %	Amino Acid	Codon	Frequency %
*	TAA	29.39	M	ATG	100.00
	TAG	56.46	N	AAC	59.38
	TGA	14.16		AAT	40.62
A	GCA	16.00	P	CCA	15.36
	GCC	27.63		CCC	26.30
	GCG	40.98		CCG	36.54
	GCT	15.39		CCT	21.79
C	TGC	64.41	Q	CAA	26.10
	TGT	35.59		CAG	73.90
D	GAC	61.90	R	AGA	2.31
	GAT	38.10		AGG	3.38
E	GAA	28.24		CGA	8.60
	GAG	71.76		CGC	50.29
F	TTC	52.82		CGG	15.97
	TTT	47.18		CGT	19.44
G	GGA	11.61	S	AGC	21.37
	GGC	51.64		AGT	11.16
	GGG	13.02		TCA	9.77
	GGT	23.74		TCC	12.96
H	CAC	59.96		TCG	31.64
	CAT	40.04		TCT	13.10
I	ATA	7.97	T	ACA	19.53
	ATC	50.54		ACC	22.05
	ATT	41.49		ACG	44.98
K	AAA	25.79		ACT	13.44
	AAG	74.21	V	GTA	9.63
L	CTA	7.22		GTC	27.61
	CTC	28.18		GTG	50.99
	CTG	35.85		GTT	11.76
	CTT	13.57	W	TGG	100.00
	TTA	3.09		Y	TAC
	TTG	12.10	TAT		35.41

Supplementary Table 1. Relative synonymous codon usage in *Malassezia sympodialis*.

mCherry

ATGGTGTCGAAGGGCGAGGAAGACAACATGGCGATCATTAAAGGAGTTCATGCGCTTTA
AGGTGCACATGGAGGGCTCGGTGAACGGCCACGAGTTCGAGATTGAGGGCGAGGGC
GAGGGCCGCCCTTACGAGGGCACGCAGACGGCGAAGCTCAAGGTGACGAAGGGCG
GCCCCCTGCCCTTTGCGTGGGACATCCTCTCGCCGACGTTTATGTACGGCTCGAAGG
CGTACGTGAAGCACCCGGCGGACATTCCGGACTACCTGAAGCTCTCGTTCGGGAGG
GCTTTAAGTGGGAGCGCGTGATGAACTTTGAGGACGGCGGCGTGGTGACGGTGACG
CAGGACTCGTCGCTGCAGGACGGCGAGTTCATCTACAAGGTGAAGCTGCGCGGCAC
GAACTTCCCTCGGACGGCCCCGGTGATGCAGAAGAAGACGATGGGCTGGGAGGCGT
CGTCGGAGCGCATGTACCCCGAGGACGGCGCGCTGAAGGGCGAGATTAAGCAGCGC
CTGAAGCTCAAGGACGGTGGCCACTACGACGCGGAGGTGAAGACGACGTACAAGGC
GAAGAAGCCCGTGCAGCTGCCCGGCGCGTACAACGTGAACATCAAGCTCGACATTAC
GTCGCACAACGAGGACTACACGATTGTGGAGCAGTACGAGCGCGCGGAGGGCCCGC
ACTCGACGGGCGGCATGGACGAGCTCTACAAG

MVSKGEEDNMAIIKEFMRFKVHMEGSVNGHEFEIEGEGEGRPYEGTQTAKLKVTKGGPL
PFAWDILSPQFMYGSKAYVKHPADIPDYLLKLSFPEGFKWERVMNFEDGGVVTVDSSLQ
DGEFIYKVKLRGTFNPSDGPVMQKKTMGWEASSERMYPEDGALKGEIKQRLKLDGGHY
DAEVKTTYKAKKPVLPGAYNVNIKLDITSHNEDYTIVEQYERAEGRHSTGGMDELYK

P2A

GGCTCGGGCGCGACGAACTTCTCGCTCCTCAAGCAGGCGGGCGACGTGGAGGAGAACCCGGGCCCCG



Supplementary Figure 1. Codon optimised DNA and protein sequence of mCherry fluorescent protein and porcine teschovirus-1 2A (P2A) pseudo-autolytic peptide.

Malassezia furfur CBS 14141 Chromosome 2, putative CDC25 Phosphatase (143 aa)

MSFSPPYQYMDADTLASELRRRTQAPNSIAVVDVRDDDYEGGHIVGAIHAPSGTFL
TRVDSL VGKELQDYERVVFHCSLSQQRGPKSARIYRETRDAAQAAGRVPPTKEQAI
FVLRDGF AHFGPKFKNERDLVEDWDEEAWEWR*

Malassezia furfur CBS 14141 Chromosome 2, hypothetical Adiponectin Protein Receptor
(632 aa)

MGSDVTPSESGSGVSTPPRVSCPSTPNHVHYTPVTAAALAALSDSIEGGPALRASQS
SRPPSISDHSEGTHTAAHSAVD AFSLPYWLA YLRSEAA RHAHDIDQRMHAILESPD
SNDNVLKASISMMTHQLDVVYHALGNLSQRLPMGPSALYDSLPSQSDL SHKLQTL
MKDWEQHAHLPHSPLFPQTGPLSFGSLGWNASMEQDATASVPAWSYSSPFG LIPG
DWASMVHMP SREQVSDEVHRR LHAFVEQMHSMPARLSQAALPTSLAAWEAPAS
ELLHRVEEKL GEMSEQGRAGASHLVQRANQAVHDVEDVLYQAACELAREGRVLI
SYQSLPTLWRNND CIHTGYRFIPVRNWTLLGSIFQIHNETGNIH THLSGLILVGALF
WFSGSLDSL TTTTDRWIQTLYLLAAAKCLVCSVSWHVMAGCADLNWFQCFACID
YTGISWLVAASLLTLVYNGFYCQPNLAIYSVGVFLLGTTMGVLPWYPWFDDPKN
RTLRLSLFVIMALVGLVPFTHGMYLHGFQHMVYFFSPIPSIASYIAGVVVYALRFPE
KYWPGRFDLLG HSHQMWHIAIVLAIALHYRAILLFHKDRFTYSQVDGTCPSFADSL
PWSNAAVGGW WPQAGKALGAL*

Supplementary Table 2. Protein sequences of hypothetical genes located both upstream and downstream of the random mutagenesis insertion point in *mf::mc-27* strain.