

Table S1: Significantly enriched GO terms for genes differentially expressed between morning- and afternoon-collected foragers.

GO category	GO Term	Count	%	P-value
Cell Component level 1	extracellular region	20	4.55%	6.23E-04
Mol Function level 2	structural constituent of ribosome	25	5.68%	0.00151909
Mol Function level 2	isomerase activity	13	2.95%	0.00184953
Cell Component level 3	cytoplasm	132	30.00%	0.00193726
Biol Process level 3	cellular catabolic process	29	6.59%	0.00232346
Biol Process level 2	catabolic process	31	7.05%	0.00274664
Cell Component level 5	cytoplasm	132	30.00%	0.0038595
Biol Process level 3	cellular biosynthetic process	62	14.09%	0.00409179
Cell Component level 4	cytoplasm	132	30.00%	0.00419286
Cell Component level 4	cytosolic ribosome (sensu Eukaryota)	15	3.41%	0.0042346
Cell Component level 5	cytosolic ribosome (sensu Eukaryota)	15	3.41%	0.00424633
Cell Component level 3	proteasome core complex (sensu Eukaryota)	6	1.36%	0.00531343
Cell Component level 4	proteasome core complex (sensu Eukaryota)	6	1.36%	0.00589536
Cell Component level 5	proteasome core complex (sensu Eukaryota)	6	1.36%	0.00590931
Cell Component level 4	cytosol	27	6.14%	0.00736113
Cell Component level 5	cytosol	27	6.14%	0.00737195
Cell Component level 3	ribosome	25	5.68%	0.00787205
Biol Process level 2	cell adhesion	19	4.32%	0.00838361
Biol Process level 1	biological adhesion	19	4.32%	0.0098868
Cell Component level 4	ribosome	25	5.68%	0.01037015
Cell Component level 5	ribosome	25	5.68%	0.01039154
Cell Component level 4	cytosolic part	17	3.86%	0.01073856
Cell Component level 3	ribosomal subunit	22	5.00%	0.01074598
Cell Component level 3	cytoplasmic part	108	24.55%	0.01075052
Cell Component level 5	cytosolic part	17	3.86%	0.01076926
Biol Process level 2	biosynthetic process	68	15.45%	0.01243578
Cell Component level 4	ribosomal subunit	22	5.00%	0.01377623
Cell Component level 5	ribosomal subunit	22	5.00%	0.01381185
Cell Component level 3	proteasome complex (sensu Eukaryota)	10	2.27%	0.01456207
Biol Process level 2	maintenance of protein localization	4	0.91%	0.01641689
Biol Process level 3	maintenance of protein localization	4	0.91%	0.01669994
Cell Component level 4	proteasome complex (sensu Eukaryota)	10	2.27%	0.01683375
Cell Component level 5	proteasome complex (sensu Eukaryota)	10	2.27%	0.01688178
Biol Process level 4	maintenance of protein localization	4	0.91%	0.01728508
Mol Function level 4	magnesium ion binding	7	1.59%	0.01925159
Biol Process level 2	maintenance of localization	5	1.14%	0.01930233
Cell Component level 5	cytoplasmic part	108	24.55%	0.01975791
Cell Component level 4	cytoplasmic part	108	24.55%	0.02029637
Biol Process level 1	maintenance of localization	5	1.14%	0.020394
Mol Function level 1	antioxidant activity	5	1.14%	0.02080644
Cell Component level 3	small ribosomal subunit	11	2.50%	0.02155214
Biol Process level 4	cellular macromolecule catabolic process	17	3.86%	0.0220579
Mol Function level 5	nucleoside diphosphate kinase activity	3	0.68%	0.02347454
Biol Process level 3	cell redox homeostasis	7	1.59%	0.02436663
Biol Process level 4	oocyte microtubule cytoskeleton organization	6	1.36%	0.02490946

Biol Process level 5	establishment and/or maintenance of cytoskeleton polarity	6	1.36%	0.02499097
Cell Component level 4	small ribosomal subunit	11	2.50%	0.0250229
Cell Component level 5	small ribosomal subunit	11	2.50%	0.02509591
Biol Process level 3	macromolecule catabolic process	19	4.32%	0.02547623
Biol Process level 5	cell redox homeostasis	7	1.59%	0.02584167
Mol Function level 2	oxidoreductase activity	38	8.64%	0.02643695
Biol Process level 2	translation	34	7.73%	0.02658954
Cell Component level 3	germline ring canal	4	0.91%	0.02936536
Cell Component level 3	intercellular bridge	4	0.91%	0.02936536
Cell Component level 2	intercellular bridge	4	0.91%	0.02965062
Biol Process level 2	cell fate commitment	17	3.86%	0.03003595
Cell Component level 4	cytosolic small ribosomal subunit (sensu Eukaryota)	7	1.59%	0.03096888
Cell Component level 5	cytosolic small ribosomal subunit (sensu Eukaryota)	7	1.59%	0.03104421
Cell Component level 4	germline ring canal	4	0.91%	0.0313204
Mol Function level 2	peroxidase activity	4	0.91%	0.03267941
Mol Function level 2	transmembrane transporter activity	41	9.32%	0.0327761
Biol Process level 4	translation	34	7.73%	0.03347212
Biol Process level 5	translation	34	7.73%	0.03363527
Cell Component level 4	lipid particle	17	3.86%	0.03392016
Cell Component level 5	lipid particle	17	3.86%	0.03402637
Biol Process level 3	cell-cell adhesion	9	2.05%	0.03456282
Biol Process level 4	cell fate commitment	17	3.86%	0.03485578
Mol Function level 4	peroxidase activity	4	0.91%	0.03498355
Mol Function level 3	oxidoreductase activity, acting on peroxide as acceptor	4	0.91%	0.03663431
Mol Function level 2	substrate-specific transporter activity	40	9.09%	0.03744975
Biol Process level 3	macromolecule biosynthetic process	42	9.55%	0.03773692
Biol Process level 3	lipid metabolic process	25	5.68%	0.03904056
Cell Component level 3	proton-transporting two-sector ATPase complex	5	1.14%	0.04003851
Mol Function level 3	substrate-specific transmembrane transporter activity	37	8.41%	0.04320409
Cell Component level 4	proton-transporting two-sector ATPase complex	5	1.14%	0.04325495
Cell Component level 5	proton-transporting two-sector ATPase complex	5	1.14%	0.0433397
Mol Function level 4	endopeptidase activity	19	4.32%	0.04377121
Mol Function level 5	glutathione peroxidase activity	3	0.68%	0.04413503
Biol Process level 2	behavior	21	4.77%	0.04449898
Mol Function level 4	rRNA binding	4	0.91%	0.04879272

Table S2. Significantly enriched GO terms for genes with significantly higher gene expression in morning-collected foragers as compared to afternoon-collected foragers.

GO Category	GO Term	Count	%	PValue
Cell Component level 4	cytosol	49	11.29%	2.80E-14
Cell Component level 5	cytosol	49	11.29%	4.56E-14
Mol Function level 2	structural constituent of ribosome	44	10.14%	5.34E-14
Cell Component level 4	cytosolic ribosome (sensu Eukaryota)	30	6.91%	7.15E-14
Cell Component level 5	cytosolic ribosome (sensu Eukaryota)	30	6.91%	1.00E-13
Cell Component level 3	ribosomal subunit	41	9.45%	2.61E-13
Cell Component level 3	ribosome	44	10.14%	5.96E-13
Cell Component level 4	ribosomal subunit	41	9.45%	1.22E-12
Cell Component level 5	ribosomal subunit	41	9.45%	1.86E-12
Cell Component level 4	cytosolic part	33	7.60%	1.93E-12
Cell Component level 5	cytosolic part	33	7.60%	2.75E-12
Cell Component level 4	ribosome	44	10.14%	2.99E-12
Cell Component level 5	ribosome	44	10.14%	4.62E-12
Biol Process level 2	translation	54	12.44%	9.42E-11
Biol Process level 4	translation	54	12.44%	2.54E-10
Biol Process level 5	translation	54	12.44%	2.86E-10
Cell Component level 3	cytoplasm	149	34.33%	3.14E-10
Biol Process level 3	cellular biosynthetic process	80	18.43%	3.40E-10
Biol Process level 3	macromolecule biosynthetic process	62	14.29%	1.55E-09
Biol Process level 2	biosynthetic process	86	19.82%	4.92E-09
Cell Component level 4	cytoplasm	149	34.33%	8.49E-09
Cell Component level 5	cytoplasm	149	34.33%	2.14E-08
Cell Component level 2	ribonucleoprotein complex	49	11.29%	2.51E-08
Cell Component level 3	ribonucleoprotein complex	49	11.29%	2.55E-08
Cell Component level 3	cytoplasmic part	125	28.80%	2.57E-08
Cell Component level 5	cytosolic large ribosomal subunit (sensu Eukaryota)	18	4.15%	5.69E-08
Cell Component level 4	ribonucleoprotein complex	49	11.29%	1.16E-07
Cell Component level 3	small ribosomal subunit	19	4.38%	1.57E-07
Cell Component level 5	ribonucleoprotein complex	49	11.29%	1.73E-07
Mol Function level 1	structural molecule activity	48	11.06%	1.75E-07
Biol Process level 2	cellular metabolic process	217	50.00%	1.78E-07
Biol Process level 1	metabolic process	235	54.15%	2.30E-07
Cell Component level 4	small ribosomal subunit	19	4.38%	3.33E-07
Cell Component level 5	small ribosomal subunit	19	4.38%	4.07E-07
Cell Component level 4	cytoplasmic part	125	28.80%	4.24E-07
Cell Component level 4	large ribosomal subunit	24	5.53%	7.97E-07
Cell Component level 5	cytoplasmic part	125	28.80%	9.10E-07
Cell Component level 5	large ribosomal subunit	24	5.53%	1.01E-06
Cell Component level 1	macromolecular complex	120	27.65%	1.87E-06
Cell Component level 4	cytosolic small ribosomal subunit (sensu Eukaryota)	12	2.76%	5.63E-06
Cell Component level 5	cytosolic small ribosomal subunit (sensu Eukaryota)	12	2.76%	6.43E-06
Cell Component level 3	mitochondrial membrane part	24	5.53%	7.30E-06
Cell Component level 4	mitochondrial membrane part	24	5.53%	1.66E-05
Cell Component level 3	organelle inner membrane	29	6.68%	1.81E-05
Cell Component level 5	mitochondrial membrane part	24	5.53%	2.07E-05

Biol Process level 3	oxidative phosphorylation	22	5.07%	2.50E-05
Cell Component level 3	mitochondrial part	46	10.60%	3.21E-05
Cell Component level 3	mitochondrial envelope	32	7.37%	3.50E-05
Mol Function level 4	rRNA binding	7	1.61%	3.69E-05
Cell Component level 4	mitochondrial inner membrane	29	6.68%	4.50E-05
Cell Component level 4	organelle inner membrane	29	6.68%	4.50E-05
Cell Component level 5	mitochondrial inner membrane	29	6.68%	5.74E-05
Cell Component level 5	organelle inner membrane	29	6.68%	5.74E-05
Cell Component level 2	non-membrane-bound organelle	60	13.82%	8.70E-05
Cell Component level 3	intracellular non-membrane-bound organelle	60	13.82%	8.82E-05
Cell Component level 4	mitochondrial envelope	32	7.37%	9.04E-05
Cell Component level 3	mitochondrial membrane	29	6.68%	9.32E-05
Cell Component level 4	mitochondrial part	46	10.60%	1.07E-04
Cell Component level 2	intracellular part	193	44.47%	1.14E-04
Cell Component level 5	mitochondrial envelope	32	7.37%	1.16E-04
Cell Component level 3	intracellular part	193	44.47%	1.19E-04
Cell Component level 5	mitochondrial part	46	10.60%	1.47E-04
Cell Component level 3	proteasome complex (sensu Eukaryota)	13	3.00%	1.82E-04
Biol Process level 3	electron transport	25	5.76%	2.11E-04
Cell Component level 4	mitochondrial membrane	29	6.68%	2.20E-04
Cell Component level 4	mitochondrial respiratory chain	16	3.69%	2.56E-04
Cell Component level 5	mitochondrial membrane	29	6.68%	2.76E-04
Biol Process level 2	generation of precursor metabolites and energy	31	7.14%	2.80E-04
Cell Component level 4	proteasome complex (sensu Eukaryota)	13	3.00%	2.93E-04
Cell Component level 5	mitochondrial respiratory chain	16	3.69%	2.98E-04
Cell Component level 5	proteasome complex (sensu Eukaryota)	13	3.00%	3.33E-04
Cell Component level 4	intracellular non-membrane-bound organelle	60	13.82%	3.49E-04
Biol Process level 4	ATP synthesis coupled electron transport	14	3.23%	4.66E-04
Biol Process level 5	organelle ATP synthesis coupled electron transport	14	3.23%	4.89E-04
Cell Component level 5	intracellular non-membrane-bound organelle	60	13.82%	5.00E-04
Cell Component level 3	proteasome core complex (sensu Eukaryota)	7	1.61%	5.01E-04
Cell Component level 4	mitochondrion	51	11.75%	5.91E-04
Biol Process level 3	cellular catabolic process	29	6.68%	5.95E-04
Biol Process level 2	catabolic process	31	7.14%	6.39E-04
Cell Component level 4	proteasome core complex (sensu Eukaryota)	7	1.61%	6.61E-04
Biol Process level 4	cellular protein metabolic process	113	26.04%	6.93E-04
Cell Component level 5	proteasome core complex (sensu Eukaryota)	7	1.61%	7.12E-04
Cell Component level 2	intracellular organelle part	106	24.42%	7.80E-04
Cell Component level 2	organelle envelope	33	7.60%	7.88E-04
Cell Component level 3	intracellular organelle part	106	24.42%	7.93E-04
Cell Component level 3	organelle envelope	33	7.60%	7.94E-04
Cell Component level 5	mitochondrion	51	11.75%	8.09E-04
Biol Process level 3	cellular macromolecule metabolic process	113	26.04%	8.58E-04
Cell Component level 2	organelle part	106	24.42%	8.62E-04
Biol Process level 3	macromolecule catabolic process	22	5.07%	8.90E-04
Cell Component level 4	lipid particle	21	4.84%	8.96E-04
Cell Component level 1	envelope	33	7.60%	9.25E-04
Cell Component level 5	lipid particle	21	4.84%	0.00106364
Biol Process level 3	protein metabolic process	114	26.27%	0.00106524
Cell Component level 2	protein complex	90	20.74%	0.00119323

Mol Function level 4	endopeptidase activity	23	5.30%	0.00120338
Cell Component level 1	organelle part	106	24.42%	0.00131232
Cell Component level 4	mitochondrial proton-transporting ATP synthase complex	7	1.61%	0.00179345
Cell Component level 2	intracellular	201	46.31%	0.001805
Cell Component level 4	organelle envelope	33	7.60%	0.00183999
Cell Component level 3	intracellular	201	46.31%	0.00187765
Cell Component level 5	mitochondrial proton-transporting ATP synthase complex	7	1.61%	0.00192713
Cell Component level 3	proton-transporting ATP synthase complex	7	1.61%	0.00209902
Cell Component level 5	organelle envelope	33	7.60%	0.00229539
Cell Component level 4	proton-transporting ATP synthase complex	7	1.61%	0.00273108
Cell Component level 5	proton-transporting ATP synthase complex	7	1.61%	0.00293093
Cell Component level 4	intracellular part	193	44.47%	0.00389141
Biol Process level 2	macromolecule metabolic process	168	38.71%	0.00393127
Biol Process level 2	primary metabolic process	195	44.93%	0.00406562
Biol Process level 4	cellular macromolecule catabolic process	18	4.15%	0.00469333
Cell Component level 4	intracellular organelle part	106	24.42%	0.00487684
Biol Process level 5	cellular protein catabolic process	11	2.53%	0.00517759
Biol Process level 5	modification-dependent macromolecule catabolic process	11	2.53%	0.00517759
Mol Function level 4	NADH dehydrogenase activity	9	2.07%	0.00539759
Mol Function level 3	oxidoreductase activity, acting on NADH or NADPH	10	2.30%	0.00560987
Biol Process level 4	protein catabolic process	12	2.76%	0.00625428
Biol Process level 5	protein catabolic process	12	2.76%	0.00649991
Cell Component level 5	intracellular organelle part	106	24.42%	0.00775429
Cell Component level 3	proteasome regulatory particle, base subcomplex	5	1.15%	0.0080292
Biol Process level 4	mitochondrial electron transport, NADH to ubiquinone	9	2.07%	0.00861519
Cell Component level 3	respiratory chain complex I	9	2.07%	0.00881711
Cell Component level 3	NADH dehydrogenase complex (quinone)	9	2.07%	0.00881711
Cell Component level 4	proteasome regulatory particle, base subcomplex	5	1.15%	0.00963485
Cell Component level 5	proteasome regulatory particle, base subcomplex	5	1.15%	0.0101182
Biol Process level 1	gene expression	86	19.82%	0.01025009
Biol Process level 4	biopolymer catabolic process	15	3.46%	0.01126867
Cell Component level 4	NADH dehydrogenase complex (quinone)	9	2.07%	0.01186613
Cell Component level 4	respiratory chain complex I	9	2.07%	0.01186613
Cell Component level 4	mitochondrial respiratory chain complex I	9	2.07%	0.01186613
Mol Function level 3	peptidase activity	27	6.22%	0.01220242
Cell Component level 5	respiratory chain complex I	9	2.07%	0.0128434
Cell Component level 5	NADH dehydrogenase complex (quinone)	9	2.07%	0.0128434
Cell Component level 5	mitochondrial respiratory chain complex I	9	2.07%	0.0128434
Mol Function level 2	oxidoreductase activity	39	8.99%	0.01325982
Mol Function level 4	magnesium ion binding	7	1.61%	0.0147554
Mol Function level 1	antioxidant activity	5	1.15%	0.01940609
Mol Function level 5	nucleoside diphosphate kinase activity	3	0.69%	0.02160293
Biol Process level 3	translational initiation	8	1.84%	0.02162925
Cell Component level 3	proton-transporting two-sector ATPase complex	9	2.07%	0.02188416
Biol Process level 4	alcohol biosynthetic process	4	0.92%	0.02260778
Mol Function level 3	translation factor activity, nucleic acid binding	10	2.30%	0.02279624
Biol Process level 5	monosaccharide biosynthetic process	4	0.92%	0.0229404
Mol Function level 5	ATPase activity, coupled to transmembrane movement	12	2.76%	0.02308302
Biol Process level 5	translational initiation	8	1.84%	0.02450978
Mol Function level 5	threonine endopeptidase activity	4	0.92%	0.02665398

Mol Function level 2	translation factor activity, nucleic acid binding	10	2.30%	0.02676061
Cell Component level 4	mitochondrial proton-transporting ATP synthase complex	4	0.92%	0.02879394
Cell Component level 4	proton-transporting two-sector ATPase complex	9	2.07%	0.02879806
Cell Component level 5	mitochondrial proton-transporting ATP synthase complex	4	0.92%	0.02987292
Biol Process level 3	cofactor metabolic process	19	4.38%	0.03046757
Cell Component level 5	proton-transporting two-sector ATPase complex	9	2.07%	0.03097504
Mol Function level 3	electron carrier activity	14	3.23%	0.03102381
Biol Process level 4	cellular carbohydrate metabolic process	18	4.15%	0.03208603
Cell Component level 4	organellar small ribosomal subunit	7	1.61%	0.03288201
Cell Component level 4	mitochondrial small ribosomal subunit	7	1.61%	0.03288201
Cell Component level 3	proton-transporting two-sector ATPase complex	5	1.15%	0.03312621
Cell Component level 2	organelle membrane	35	8.06%	0.03342026
Cell Component level 3	organelle membrane	35	8.06%	0.03360501
Mol Function level 4	hydrolase activity catalyzing transmembrane movement	12	2.76%	0.0347517
Cell Component level 5	organellar small ribosomal subunit	7	1.61%	0.03489716
Cell Component level 5	mitochondrial small ribosomal subunit	7	1.61%	0.03489716
Mol Function level 1	translation regulator activity	10	2.30%	0.03668182
Cell Component level 3	proton-transporting ATP synthase complex, coupling factor F(o)	4	0.92%	0.0372693
Cell Component level 4	proton-transporting two-sector ATPase complex	5	1.15%	0.03908941
Mol Function level 5	glutathione peroxidase activity	3	0.69%	0.04072489
Cell Component level 5	proton-transporting two-sector ATPase complex	5	1.15%	0.04085865
Cell Component level 4	proton-transporting ATP synthase complex, coupling factor F(o)	4	0.92%	0.04257474
Mol Function level 3	glutathione peroxidase activity	3	0.69%	0.04349528
Cell Component level 5	proton-transporting ATP synthase complex, coupling factor F(o)	4	0.92%	0.04412134
Biol Process level 3	carbohydrate metabolic process	24	5.53%	0.04495144
Biol Process level 5	nucleoside triphosphate biosynthetic process	8	1.84%	0.04508237

Table S3. Significantly enriched GO terms for genes with significantly higher gene expression in afternoon-collected foragers as compared to morning-collected foragers.

GO Category	GO Term	Count	%	PValue
Biol Process level 3	lipid metabolic process	31	7.51%	4.03E-05
Biol Process level 2	behavior	26	6.30%	1.21E-04
Biol Process level 1	localization	101	24.46%	1.29E-04
Mol Function level 5	peptide-methionine-(S)-S-oxide reductase activity	5	1.21%	2.09E-04
Mol Function level 4	oxidoreductase activity, sulfur donors and disulfide acceptors	5	1.21%	2.42E-04
Biol Process level 1	rhythmic process	10	2.42%	2.74E-04
Cell Component level 4	endoplasmic reticulum	22	5.33%	5.30E-04
Cell Component level 5	endoplasmic reticulum	22	5.33%	6.17E-04
Mol Function level 2	isomerase activity	13	3.15%	6.27E-04
Biol Process level 2	circadian rhythm	9	2.18%	0.0011106
Biol Process level 1	maintenance of localization	6	1.45%	0.00139154
Biol Process level 2	maintenance of localization	6	1.45%	0.00139674
Biol Process level 4	cellular lipid metabolic process	23	5.57%	0.00146618
Biol Process level 3	cellular lipid metabolic process	23	5.57%	0.00181973
Biol Process level 2	rhythmic behavior	8	1.94%	0.00183813
Biol Process level 3	rhythmic behavior	8	1.94%	0.00188592
Biol Process level 1	response to stimulus	48	11.62%	0.00449752
Mol Function level 3	oxidoreductase activity, acting on sulfur group of donors	5	1.21%	0.00479187
Mol Function level 3	protein kinase regulator activity	7	1.69%	0.00531099
Mol Function level 2	kinase regulator activity	8	1.94%	0.00548635
Biol Process level 4	circadian behavior	7	1.69%	0.00668732
Biol Process level 3	circadian behavior	7	1.69%	0.00721931
Biol Process level 1	biological adhesion	17	4.12%	0.00878023
Biol Process level 2	cell adhesion	17	4.12%	0.00883815
Biol Process level 4	maintenance of protein localization	4	0.97%	0.0102032
Biol Process level 5	prosthetic group metabolic process	5	1.21%	0.01024123
Biol Process level 3	chemosensory behavior	9	2.18%	0.01031096
Biol Process level 2	maintenance of protein localization	4	0.97%	0.01052335
Biol Process level 3	maintenance of protein localization	4	0.97%	0.01065562
Biol Process level 4	learning	7	1.69%	0.01075861
Biol Process level 5	establishment and/or maintenance of cytoskeleton polarity	6	1.45%	0.01102951
Biol Process level 3	prosthetic group metabolic process	5	1.21%	0.01127528
Biol Process level 4	oocyte microtubule cytoskeleton organization	6	1.45%	0.01158577
Cell Component level 4	endoplasmic reticulum part	10	2.42%	0.0117409
Cell Component level 3	endoplasmic reticulum part	10	2.42%	0.01181833
Cell Component level 5	endoplasmic reticulum part	10	2.42%	0.01262726
Biol Process level 3	learning and/or memory	9	2.18%	0.0143174
Mol Function level 3	lipid transporter activity	5	1.21%	0.01530148
Biol Process level 2	response to abiotic stimulus	14	3.39%	0.01646947
Biol Process level 5	oocyte axis determination	11	2.66%	0.0170473
Biol Process level 5	olfactory learning	6	1.45%	0.01802728
Biol Process level 4	oocyte axis determination	11	2.66%	0.01842518
Mol Function level 5	protein-methionine-R-oxide reductase activity	3	0.73%	0.01914839
Cell Component level 4	germline ring canal	4	0.97%	0.02017843
Cell Component level 3	germline ring canal	4	0.97%	0.0201915

Cell Component level 3	intercellular bridge	4	0.97%	0.0201915
Cell Component level 2	intercellular bridge	4	0.97%	0.02042452
Biol Process level 4	sequestering of lipid	3	0.73%	0.02066872
Biol Process level 5	oocyte construction	11	2.66%	0.02151818
Biol Process level 2	response to chemical stimulus	17	4.12%	0.02155979
Biol Process level 3	locomotory behavior	11	2.66%	0.02289151
Biol Process level 1	establishment of localization	79	19.13%	0.02345202
Biol Process level 2	transport	78	18.89%	0.02353548
Biol Process level 2	establishment of localization	79	19.13%	0.02366241
Biol Process level 5	oocyte development	11	2.66%	0.02404916
Biol Process level 2	cell motility	17	4.12%	0.02526339
Biol Process level 3	oocyte construction	11	2.66%	0.02561518
Biol Process level 3	transport	78	18.89%	0.02584794
Biol Process level 2	sleep	4	0.97%	0.02585659
Biol Process level 4	oocyte development	11	2.66%	0.025918
Biol Process level 3	cell motility	17	4.12%	0.02619635
Biol Process level 4	lipid transport	6	1.45%	0.02874319
Biol Process level 3	lipid transport	6	1.45%	0.03051321
Biol Process level 1	multicellular organismal process	90	21.79%	0.03051333
Biol Process level 5	germ cell development	13	3.15%	0.03137042
Mol Function level 2	oxidoreductase activity	34	8.23%	0.03230924
Cell Component level 1	extracellular region	14	3.39%	0.03286903
Biol Process level 4	germ cell development	13	3.15%	0.03404026
Biol Process level 2	localization of cell	17	4.12%	0.03408011
Biol Process level 1	developmental process	85	20.58%	0.03416661
Cell Component level 4	integral to membrane	53	12.83%	0.0349069
Biol Process level 3	response to wounding	4	0.97%	0.03677415
Cell Component level 4	intrinsic to membrane	53	12.83%	0.03768409
Biol Process level 3	germ cell development	13	3.15%	0.03783865
Biol Process level 2	response to external stimulus	12	2.91%	0.03926042
Biol Process level 5	cell redox homeostasis	6	1.45%	0.03954847
Cell Component level 3	intrinsic to membrane	53	12.83%	0.03983332
Biol Process level 4	axis specification	13	3.15%	0.04037106
Cell Component level 5	integral to membrane	53	12.83%	0.04234256
Biol Process level 4	oocyte differentiation	11	2.66%	0.0428938
Biol Process level 3	cell redox homeostasis	6	1.45%	0.04377332
Biol Process level 3	axis specification	13	3.15%	0.04476133
Biol Process level 5	membrane lipid metabolic process	9	2.18%	0.04540093
Cell Component level 5	intrinsic to membrane	53	12.83%	0.04561559
Biol Process level 5	nerve-nerve synaptic transmission	4	0.97%	0.04594905
Biol Process level 4	membrane lipid metabolic process	9	2.18%	0.04818339

Table S4. Significantly enriched GO terms for genes differentially expressed between morning- and afternoon-trained foragers.

GO Category	GO Term	Count	%	PValue
Biol Process level 5	mesoderm development	6	8.70%	0.00125436
Biol Process level 4	mesoderm development	6	8.70%	0.00155513
Biol Process level 2	catabolic process	10	14.49%	0.00370188
Mol Function level 5	phosphoric diester hydrolase activity	4	5.80%	0.0040843
Mol Function level 2	kinase regulator activity	4	5.80%	0.00883697
Biol Process level 3	macromolecule catabolic process	7	10.14%	0.01226181
Biol Process level 3	cellular catabolic process	8	11.59%	0.02176575
Biol Process level 5	tissue development	6	8.70%	0.02217571
Biol Process level 4	tissue development	6	8.70%	0.02661243
Mol Function level 3	oxidoreductase activity, acting on CH-CH group of donors	3	4.35%	0.02812104
Biol Process level 3	tissue development	6	8.70%	0.02948445
Biol Process level 4	carbohydrate catabolic process	4	5.80%	0.0315342
Mol Function level 2	two-component response regulator activity	2	2.90%	0.03198469
Mol Function level 5	fructose-bisphosphate aldolase activity	2	2.90%	0.03513494
Mol Function level 3	two-component response regulator activity	2	2.90%	0.03527912
Biol Process level 4	response to heat	3	4.35%	0.04237111
Cell Component level 3	organelle inner membrane	6	8.70%	0.04409891
Biol Process level 3	response to heat	3	4.35%	0.0444005
Mol Function level 3	protein kinase regulator activity	3	4.35%	0.04809975

Table S5. Significantly enriched GO terms for genes with significantly higher gene expression in morning-trained foragers as compared to afternoon-trained foragers.

GO Category	GO Term	Count	%	PValue
Mol Function level 2	kinase regulator activity	3	12.00%	0.01142202
Mol Function level 5	fructose-bisphosphate aldolase activity	2	8.00%	0.0152706
Biol Process level 2	catabolic process	5	20.00%	0.02684746
Biol Process level 4	carbohydrate catabolic process	3	12.00%	0.02913609
Mol Function level 4	aldehyde-lyase activity	2	8.00%	0.03447943
Biol Process level 3	macromolecule catabolic process	4	16.00%	0.03520985
Mol Function level 3	kinase inhibitor activity	2	8.00%	0.04118181
Biol Process level 4	mesoderm development	3	12.00%	0.04396019
Biol Process level 5	mesoderm development	3	12.00%	0.04722053

Table S6. Significantly enriched GO terms for genes with significantly higher gene expression in afternoon-trained foragers as compared to morning-trained foragers.

GO Category	GO Term	Count	%	PValue
Biol Process level 5	nucleotide metabolic process	5	11.11%	0.00811953
Mol Function level 3	oxidoreductase activity, acting on the CH-CH group of donors	3	6.67%	0.0108935
Biol Process level 2	response to abiotic stimulus	5	11.11%	0.01128647
Biol Process level 4	response to heat	3	6.67%	0.01691561
Biol Process level 3	response to heat	3	6.67%	0.01835818
Biol Process level 4	nucleobase, nucleoside and nucleotide metabolic process	5	11.11%	0.01915743
Mol Function level 2	two-component response regulator activity	2	4.44%	0.01991376
Mol Function level 3	two-component response regulator activity	2	4.44%	0.02151968
Biol Process level 3	response to temperature stimulus	3	6.67%	0.02428874
Biol Process level 5	establishment and/or maintenance of chromatin architecture	4	8.89%	0.02540583
Biol Process level 5	DNA packaging	4	8.89%	0.02540583
Cell Component level 3	organelle inner membrane	5	11.11%	0.04087235
Biol Process level 4	two-component signal transduction system (phosphorelay)	2	4.44%	0.04215106
Cell Component level 4	organelle inner membrane	5	11.11%	0.04441127
Cell Component level 4	mitochondrial inner membrane	5	11.11%	0.04441127
Cell Component level 2	organelle membrane	7	15.56%	0.04446571
Cell Component level 3	organelle membrane	7	15.56%	0.0445454
Cell Component level 3	mitochondrial part	7	15.56%	0.04529472
Cell Component level 5	mitochondrial inner membrane	5	11.11%	0.04837859
Cell Component level 5	organelle inner membrane	5	11.11%	0.04837859
Cell Component level 4	organelle membrane	7	15.56%	0.04944547

Table S7. Significantly enriched GO terms for genes differentially expressed between active (anticipating a food reward) and inactive foragers.

GO Category	GO Term	Count	%	PValue
Mol Function level 2	structural constituent of ribosome	91	7.97%	5.70E-28
Cell Component level 3	ribosome	90	7.88%	3.53E-26
Cell Component level 4	ribosome	90	7.88%	6.54E-25
Cell Component level 3	ribosomal subunit	80	7.01%	1.82E-24
Cell Component level 5	ribosome	90	7.88%	2.45E-24
Cell Component level 4	ribosomal subunit	80	7.01%	2.57E-23
Cell Component level 5	ribosomal subunit	80	7.01%	8.46E-23
Cell Component level 4	cytosolic ribosome (sensu Eukaryota)	51	4.47%	1.36E-21
Cell Component level 5	cytosolic ribosome (sensu Eukaryota)	51	4.47%	3.11E-21
Cell Component level 2	ribonucleoprotein complex	109	9.54%	2.08E-18
Cell Component level 3	ribonucleoprotein complex	109	9.54%	2.15E-18
Cell Component level 4	cytosolic part	57	4.99%	6.49E-18
Cell Component level 5	cytosolic part	57	4.99%	1.53E-17
Cell Component level 4	ribonucleoprotein complex	109	9.54%	4.26E-17
Biol Process level 2	translation	111	9.72%	1.08E-16
Cell Component level 5	ribonucleoprotein complex	109	9.54%	2.75E-16
Cell Component level 1	macromolecular complex	285	24.96%	2.80E-16
Biol Process level 5	translation	111	9.72%	3.17E-16
Biol Process level 4	translation	111	9.72%	4.11E-16
Biol Process level 3	cellular biosynthetic process	174	15.24%	5.28E-16
Mol Function level 1	structural molecule activity	109	9.54%	5.67E-15
Cell Component level 3	cytoplasmic part	276	24.17%	1.34E-13
Cell Component level 3	cytoplasm	319	27.93%	4.17E-13
Cell Component level 3	small ribosomal subunit	35	3.06%	1.23E-12
Biol Process level 3	macromolecule biosynthetic process	126	11.03%	1.99E-12
Cell Component level 5	cytosolic large ribosomal subunit (sensu Eukaryota)	31	2.71%	2.88E-12
Cell Component level 4	small ribosomal subunit	35	3.06%	4.24E-12
Cell Component level 5	small ribosomal subunit	35	3.06%	7.25E-12
Biol Process level 2	biosynthetic process	184	16.11%	8.12E-12
Cell Component level 4	cytoplasmic part	276	24.17%	1.78E-11
Cell Component level 4	large ribosomal subunit	46	4.03%	3.27E-11
Cell Component level 5	large ribosomal subunit	46	4.03%	6.20E-11
Cell Component level 4	cytoplasm	319	27.93%	8.49E-11
Cell Component level 5	cytoplasmic part	276	24.17%	1.86E-10
Cell Component level 3	mitochondrial part	102	8.93%	6.03E-10
Cell Component level 5	cytoplasm	319	27.93%	1.18E-09
Cell Component level 2	non-membrane-bound organelle	137	12.00%	1.43E-09
Cell Component level 3	intracellular non-membrane-bound organelle	137	12.00%	1.47E-09
Cell Component level 2	organelle part	256	22.42%	1.81E-09
Cell Component level 2	intracellular organelle part	255	22.33%	2.42E-09
Cell Component level 3	intracellular organelle part	255	22.33%	2.57E-09
Cell Component level 1	organelle part	256	22.42%	3.86E-09
Cell Component level 4	cytosol	69	6.04%	4.98E-09
Cell Component level 4	mitochondrial part	102	8.93%	6.20E-09
Cell Component level 4	cytosolic small ribosomal subunit (sensu Eukaryota)	20	1.75%	6.65E-09

Cell Component level 5	cytosolic small ribosomal subunit (sensu Eukaryota)	20	1.75%	9.13E-09
Cell Component level 5	cytosol	69	6.04%	1.09E-08
Cell Component level 5	mitochondrial part	102	8.93%	1.71E-08
Biol Process level 3	oxidative phosphorylation	45	3.94%	2.04E-08
Cell Component level 4	intracellular non-membrane-bound organelle	137	12.00%	2.32E-08
Cell Component level 3	mitochondrial membrane part	45	3.94%	3.56E-08
Cell Component level 2	protein complex	214	18.74%	4.29E-08
Cell Component level 5	intracellular non-membrane-bound organelle	137	12.00%	7.73E-08
Cell Component level 4	mitochondrial membrane part	45	3.94%	1.28E-07
Cell Component level 4	intracellular organelle part	255	22.33%	1.52E-07
Cell Component level 4	mitochondrion	115	10.07%	1.77E-07
Cell Component level 5	mitochondrial membrane part	45	3.94%	2.22E-07
Cell Component level 5	mitochondrion	115	10.07%	4.89E-07
Cell Component level 5	intracellular organelle part	255	22.33%	9.48E-07
Mol Function level 3	substrate-specific transmembrane transporter activity	94	8.23%	1.83E-06
Biol Process level 2	generation of precursor metabolites and energy	67	5.87%	2.82E-06
Cell Component level 4	mitochondrial respiratory chain	29	2.54%	1.15E-05
Cell Component level 4	lipid particle	42	3.68%	1.50E-05
Cell Component level 5	mitochondrial respiratory chain	29	2.54%	1.65E-05
Cell Component level 3	mitochondrial lumen	45	3.94%	2.17E-05
Cell Component level 4	mitochondrial ribosome	31	2.71%	2.18E-05
Cell Component level 4	organellar ribosome	31	2.71%	2.18E-05
Cell Component level 5	lipid particle	42	3.68%	2.38E-05
Mol Function level 5	cation transmembrane transporter activity	64	5.60%	2.89E-05
Cell Component level 3	mitochondrial envelope	58	5.08%	3.15E-05
Cell Component level 5	mitochondrial ribosome	31	2.71%	3.15E-05
Cell Component level 5	organellar ribosome	31	2.71%	3.15E-05
Cell Component level 3	mitochondrial membrane	53	4.64%	5.91E-05
Cell Component level 4	mitochondrial matrix	45	3.94%	6.35E-05
Cell Component level 4	mitochondrial lumen	45	3.94%	6.35E-05
Cell Component level 5	mitochondrial matrix	45	3.94%	9.99E-05
Cell Component level 5	mitochondrial lumen	45	3.94%	9.99E-05
Cell Component level 3	organelle inner membrane	49	4.29%	1.02E-04
Biol Process level 5	organelle ATP synthesis coupled electron transport	25	2.19%	1.02E-04
Biol Process level 4	ATP synthesis coupled electron transport	25	2.19%	1.08E-04
Cell Component level 4	mitochondrial envelope	58	5.08%	1.09E-04
Mol Function level 2	substrate-specific transporter activity	101	8.84%	1.20E-04
Cell Component level 2	intracellular organelle	367	32.14%	1.41E-04
Cell Component level 3	intracellular organelle	367	32.14%	1.49E-04
Cell Component level 2	intracellular part	434	38.00%	1.57E-04
Mol Function level 4	ion transmembrane transporter activity	72	6.30%	1.60E-04
Cell Component level 3	intracellular part	434	38.00%	1.68E-04
Cell Component level 5	mitochondrial envelope	58	5.08%	1.83E-04
Cell Component level 4	mitochondrial membrane	53	4.64%	1.85E-04
Biol Process level 3	electron transport	47	4.12%	1.91E-04
Cell Component level 1	organelle	368	32.22%	2.48E-04
Cell Component level 4	mitochondrial inner membrane	49	4.29%	2.94E-04
Cell Component level 4	organelle inner membrane	49	4.29%	2.94E-04
Cell Component level 5	mitochondrial membrane	53	4.64%	2.98E-04
Mol Function level 2	oxidoreductase activity	92	8.06%	3.30E-04

Cell Component level 4	mitochondrial small ribosomal subunit	15	1.31%	4.07E-04
Cell Component level 4	organellar small ribosomal subunit	15	1.31%	4.07E-04
Cell Component level 5	mitochondrial inner membrane	49	4.29%	4.59E-04
Cell Component level 5	organelle inner membrane	49	4.29%	4.59E-04
Mol Function level 4	primary active transmembrane transporter activity	33	2.89%	4.92E-04
Mol Function level 5	P-P-bond-hydrolysis-driven transmembrane transport	33	2.89%	4.92E-04
Cell Component level 5	mitochondrial small ribosomal subunit	15	1.31%	4.96E-04
Cell Component level 5	organellar small ribosomal subunit	15	1.31%	4.96E-04
Mol Function level 2	transmembrane transporter activity	99	8.67%	6.91E-04
Biol Process level 3	protein metabolic process	261	22.85%	0.00126707
Biol Process level 5	phosphorylation	78	6.83%	0.00178591
Mol Function level 3	active transmembrane transporter activity	51	4.47%	0.00191717
Mol Function level 1	transporter activity	115	10.07%	0.00207422
Mol Function level 5	ATPase activity, coupled to transmembrane movement	22	1.93%	0.00211804
Biol Process level 2	behavior	47	4.12%	0.00223009
Cell Component level 2	organelle envelope	61	5.34%	0.00234895
Cell Component level 3	organelle envelope	61	5.34%	0.0023744
Biol Process level 1	metabolic process	526	46.06%	0.00260611
Cell Component level 1	envelope	61	5.34%	0.00265565
Cell Component level 2	organelle membrane	79	6.92%	0.00281059
Cell Component level 3	organelle membrane	79	6.92%	0.00284594
Biol Process level 5	protein import into mitochondrion	7	0.61%	0.003261
Biol Process level 5	inner mitochondrial membrane organization and biogenesis	6	0.53%	0.00371197
Biol Process level 2	cellular metabolic process	483	42.29%	0.00374652
Cell Component level 3	proton-transporting two-sector ATPase complex	17	1.49%	0.00445366
Biol Process level 4	cellular protein metabolic process	249	21.80%	0.00505558
Mol Function level 3	heme-copper terminal oxidase activity	7	0.61%	0.00509952
Mol Function level 3	oxidoreductase activity, acting on heme group of donors	7	0.61%	0.00509952
Biol Process level 5	ATP biosynthetic process	15	1.31%	0.00512462
Mol Function level 4	cytochrome-c oxidase activity	7	0.61%	0.00579376
Mol Function level 4	oxidoreductase activity, acting on diphenols	7	0.61%	0.00579376
Mol Function level 4	oxidoreductase activity, acting on heme group of donors	7	0.61%	0.00579376
Mol Function level 5	cytochrome-c oxidase activity	7	0.61%	0.00585609
Mol Function level 5	ubiquinol-cytochrome-c reductase activity	7	0.61%	0.00585609
Mol Function level 4	P-P-bond-hydrolysis-driven protein transmembrane	10	0.88%	0.00600908
Mol Function level 4	macromolecule transmembrane transporter activity	10	0.88%	0.00600908
Mol Function level 5	P-P-bond-hydrolysis-driven protein transmembrane	10	0.88%	0.00608475
Cell Component level 4	organelle envelope	61	5.34%	0.00643863
Cell Component level 4	proton-transporting two-sector ATPase complex	17	1.49%	0.00688363
Biol Process level 4	ATP synthesis coupled proton transport	14	1.23%	0.00751167
Biol Process level 4	ATP metabolic process	15	1.31%	0.00755139
Cell Component level 5	proton-transporting two-sector ATPase complex	17	1.49%	0.00826083
Cell Component level 4	intracellular organelle	367	32.14%	0.00833753
Cell Component level 4	organelle membrane	79	6.92%	0.00891679
Biol Process level 3	cellular macromolecule metabolic process	250	21.89%	0.00897113
Cell Component level 2	intracellular	455	39.84%	0.00931126
Cell Component level 5	organelle envelope	61	5.34%	0.00966937
Cell Component level 3	receptor complex	6	0.53%	0.00983784
Cell Component level 3	intracellular	455	39.84%	0.00985202
Mol Function level 3	oxidoreductase activity, acting on diphenols	7	0.61%	0.01039086

Biol Process level 5	mitochondrial membrane organization and biogenesis	6	0.53%	0.0104365
Biol Process level 4	mitochondrial membrane organization and biogenesis	6	0.53%	0.01057777
Mol Function level 4	oxidoreductase activity, acting on sulfur group	5	0.44%	0.01060067
Mol Function level 5	glycerol kinase activity	5	0.44%	0.01069085
Mol Function level 5	peptide-methionine-(S)-S-oxide reductase activity	5	0.44%	0.01069085
Cell Component level 3	proton-transporting two-sector ATPase complex	9	0.79%	0.01190875
Mol Function level 3	protein transmembrane transporter activity	11	0.96%	0.01216651
Mol Function level 4	NADH dehydrogenase activity	14	1.23%	0.01222356
Cell Component level 3	mitochondrial intermembrane space protein transporter	5	0.44%	0.01249826
Biol Process level 3	chemosensory behavior	16	1.40%	0.01266062
Biol Process level 1	rhythmic process	13	1.14%	0.01362369
Biol Process level 3	phosphorus metabolic process	88	7.71%	0.01441563
Mol Function level 4	protein transmembrane transporter activity	11	0.96%	0.01441993
Biol Process level 5	second-messenger-mediated signaling	14	1.23%	0.01446285
Cell Component level 3	respiratory chain complex III	7	0.61%	0.0146282
Cell Component level 4	mitochondrial intermembrane space protein transporter	5	0.44%	0.01463859
Mol Function level 4	hydrolase activity, acting on acid anhydrides	24	2.10%	0.01464271
Biol Process level 5	purine nucleotide biosynthetic process	19	1.66%	0.01473813
Cell Component level 4	proton-transporting two-sector ATPase complex	9	0.79%	0.01542169
Cell Component level 5	mitochondrial intermembrane space protein transport	5	0.44%	0.01565371
Cell Component level 5	proton-transporting two-sector ATPase complex	9	0.79%	0.01719572
Cell Component level 3	respiratory chain complex I	14	1.23%	0.01757455
Cell Component level 3	NADH dehydrogenase complex (quinone)	14	1.23%	0.01757455
Cell Component level 4	respiratory chain complex III	7	0.61%	0.01803561
Cell Component level 4	mitochondrial respiratory chain complex III	7	0.61%	0.01803561
Biol Process level 3	response to organic substance	8	0.70%	0.01816016
Biol Process level 4	phosphate metabolic process	88	7.71%	0.01817947
Biol Process level 3	cofactor metabolic process	40	3.50%	0.01884778
Biol Process level 2	rhythmic behavior	11	0.96%	0.01963692
Cell Component level 5	respiratory chain complex III	7	0.61%	0.01970325
Cell Component level 5	mitochondrial respiratory chain complex III	7	0.61%	0.01970325
Cell Component level 2	membrane part	177	15.50%	0.02037799
Biol Process level 3	rhythmic behavior	11	0.96%	0.02048539
Cell Component level 3	membrane part	177	15.50%	0.02059484
Cell Component level 3	respiratory chain complex IV	6	0.53%	0.02117925
Biol Process level 3	hydrogen transport	16	1.40%	0.02177763
Biol Process level 4	mitochondrial electron transport, ubiquinol to cyt	6	0.53%	0.02268189
Biol Process level 5	proton transport	16	1.40%	0.02300102
Cell Component level 4	intracellular part	434	38.00%	0.02312098
Cell Component level 3	nuclear envelope-endoplasmic reticulum network	14	1.23%	0.02340239
Cell Component level 3	endoplasmic reticulum membrane	14	1.23%	0.02340239
Biol Process level 4	hydrogen transport	16	1.40%	0.023625
Biol Process level 4	proton transport	16	1.40%	0.023625
Mol Function level 5	ATPase activity, coupled to transmembrane movement	23	2.01%	0.02412427
Biol Process level 4	cofactor biosynthetic process	24	2.10%	0.02426565
Biol Process level 5	nucleoside triphosphate biosynthetic process	15	1.31%	0.02450949
Cell Component level 4	respiratory chain complex I	14	1.23%	0.02466606
Cell Component level 4	mitochondrial respiratory chain complex I	14	1.23%	0.02466606
Cell Component level 4	NADH dehydrogenase complex (quinone)	14	1.23%	0.02466606
Cell Component level 4	respiratory chain complex IV	6	0.53%	0.02533392

Cell Component level 4	mitochondrial respiratory chain complex IV	6	0.53%	0.02533392
Biol Process level 2	maintenance of localization	7	0.61%	0.02592449
Biol Process level 1	maintenance of localization	7	0.61%	0.02617627
Biol Process level 2	circadian rhythm	12	1.05%	0.02640219
Mol Function level 3	oxidoreductase activity, acting on NADH or NADPH	15	1.31%	0.02646726
Biol Process level 4	mitochondrial electron transport, NADH to ubiquinone	14	1.23%	0.02664953
Cell Component level 5	respiratory chain complex IV	6	0.53%	0.02732597
Cell Component level 5	mitochondrial respiratory chain complex IV	6	0.53%	0.02732597
Biol Process level 1	gene expression	192	16.81%	0.02737367
Biol Process level 5	male mating behavior	7	0.61%	0.0275266
Biol Process level 5	male courtship behavior	7	0.61%	0.0275266
Biol Process level 4	male mating behavior	7	0.61%	0.02791984
Cell Component level 5	respiratory chain complex I	14	1.23%	0.02841158
Cell Component level 5	mitochondrial respiratory chain complex I	14	1.23%	0.02841158
Cell Component level 5	NADH dehydrogenase complex (quinone)	14	1.23%	0.02841158
Mol Function level 3	oxidoreductase activity, acting on sulfur group of donors	6	0.53%	0.02921014
Biol Process level 2	maintenance of protein localization	5	0.44%	0.03055749
Biol Process level 5	protein targeting to mitochondrion	10	0.88%	0.0307241
Biol Process level 5	fatty acid biosynthetic process	9	0.79%	0.03086923
Biol Process level 3	maintenance of protein localization	5	0.44%	0.03123295
Biol Process level 4	fatty acid biosynthetic process	9	0.79%	0.03140034
Mol Function level 4	rRNA binding	6	0.53%	0.03225806
Biol Process level 4	maintenance of protein localization	5	0.44%	0.03229064
Cell Component level 4	endoplasmic reticulum membrane	14	1.23%	0.03249691
Cell Component level 4	nuclear envelope-endoplasmic reticulum network	14	1.23%	0.03249691
Biol Process level 4	coenzyme metabolic process	36	3.15%	0.03479011
Biol Process level 3	ion transport	49	4.29%	0.03709245
Cell Component level 5	endoplasmic reticulum membrane	14	1.23%	0.03725468
Cell Component level 5	nuclear envelope-endoplasmic reticulum network	14	1.23%	0.03725468
Mol Function level 4	oxidoreductase activity, acting on NADH or NADPH	11	0.96%	0.03780262
Mol Function level 4	hydrolase activity, acting on carbon-nitrogen	4	0.35%	0.03819229
Mol Function level 5	NADH dehydrogenase (quinone) activity	11	0.96%	0.0382706
Cell Component level 5	intracellular organelle	367	32.14%	0.03933067
Mol Function level 3	transferase activity, transferring alkyl or aryl	9	0.79%	0.03960956
Biol Process level 2	behavioral interaction between organisms	10	0.88%	0.03965328
Biol Process level 3	behavioral interaction between organisms	10	0.88%	0.04112891
Biol Process level 3	circadian behavior	10	0.88%	0.04112891
Biol Process level 3	mating behavior	10	0.88%	0.04112891
Cell Component level 3	mitochondrial inner membrane presequence translocation	7	0.61%	0.04162373
Biol Process level 5	cation transport	42	3.68%	0.04181734
Biol Process level 4	ion transport	49	4.29%	0.04297774
Biol Process level 4	mating behavior	10	0.88%	0.04346654
Biol Process level 4	circadian behavior	10	0.88%	0.04346654
Biol Process level 5	coenzyme biosynthetic process	21	1.84%	0.04355447
Biol Process level 4	cation transport	42	3.68%	0.04379238
Biol Process level 5	carboxylic acid biosynthetic process	9	0.79%	0.04425238
Biol Process level 5	polyamine metabolic process	4	0.35%	0.0447209
Biol Process level 4	organic acid biosynthetic process	9	0.79%	0.04497894
Mol Function level 3	electron carrier activity	26	2.28%	0.04503005
Biol Process level 5	ribonucleotide biosynthetic process	18	1.58%	0.04722269

Cell Component level 4	mitochondrial large ribosomal subunit	15	1.31%	0.04984605
Cell Component level 4	mitochondrial inner membrane presequence translocation	7	0.61%	0.05029691
Mol Function level 2	cofactor binding	20	1.75%	0.05228223
Cell Component level 5	mitochondrial inner membrane presequence translocation	7	0.61%	0.05446045
Biol Process level 2	response to chemical stimulus	34	2.98%	0.05570218
Mol Function level 2	vitamin binding	8	0.70%	0.0559328
Cell Component level 2	organelle lumen	78	6.83%	0.05593952
Cell Component level 3	organelle lumen	78	6.83%	0.05642301
Cell Component level 5	mitochondrial large ribosomal subunit	15	1.31%	0.05701616
Cell Component level 5	organellar large ribosomal subunit	15	1.31%	0.05701616
Cell Component level 3	proton-transporting ATP synthase complex	5	0.44%	0.05809564
Biol Process level 5	courtship behavior	9	0.79%	0.06094721
Biol Process level 5	olfactory learning	9	0.79%	0.06094721
Biol Process level 4	mitochondrial electron transport, cytochrome c	5	0.44%	0.06124114
Cell Component level 1	membrane-enclosed lumen	78	6.83%	0.06154189
Biol Process level 4	courtship behavior	9	0.79%	0.06190089
Biol Process level 5	monocarboxylic acid metabolic process	20	1.75%	0.06658385
Cell Component level 4	proton-transporting ATP synthase complex	5	0.44%	0.06675536
Cell Component level 4	rough endoplasmic reticulum membrane	5	0.44%	0.06675536
Cell Component level 5	proton-transporting ATP synthase complex	5	0.44%	0.07078346
Cell Component level 5	rough endoplasmic reticulum	5	0.44%	0.07078346
Cell Component level 5	rough endoplasmic reticulum membrane	5	0.44%	0.07078346
Biol Process level 4	olfactory behavior	13	1.14%	0.07475797
Cell Component level 2	cell part	553	48.42%	0.07946075
Mol Function level 4	ARF guanyl-nucleotide exchange factor activity	4	0.35%	0.07957972
Biol Process level 5	mitochondrial transport	12	1.05%	0.0801425
Biol Process level 1	cellular process	646	56.57%	0.08049274
Biol Process level 4	mitochondrial transport	12	1.05%	0.08160447
Biol Process level 2	reproductive behavior	10	0.88%	0.08972687
Cell Component level 4	membrane part	177	15.50%	0.0905211
Biol Process level 3	response to drug	4	0.35%	0.0905822
Biol Process level 3	regulation of tube length, open tracheal system	4	0.35%	0.0905822
Mol Function level 3	oxidoreductase activity, acting on the CH-CH group	7	0.61%	0.09076292
Biol Process level 1	response to stimulus	101	8.84%	0.09128955
Biol Process level 5	pole plasm protein localization	4	0.35%	0.09211279
Biol Process level 5	regulation of tube length, open tracheal system	4	0.35%	0.09211279
Biol Process level 5	regulation of tube diameter, open tracheal system	4	0.35%	0.09211279
Biol Process level 5	nucleotide metabolic process	27	2.36%	0.09260104
Biol Process level 3	reproductive behavior	10	0.88%	0.09266211
Biol Process level 4	regulation of tube diameter, open tracheal system	4	0.35%	0.09280972
Biol Process level 5	regulation of tube size, open tracheal system	7	0.61%	0.09280991
Biol Process level 4	regulation of tube size, open tracheal system	7	0.61%	0.09393068
Biol Process level 3	learning and/or memory	14	1.23%	0.09439472
Biol Process level 3	translational elongation	6	0.53%	0.0951375
Biol Process level 5	monovalent inorganic cation transport	28	2.45%	0.09548737
Cell Component level 3	endoplasmic reticulum part	15	1.31%	0.09717176
Biol Process level 5	translational elongation	6	0.53%	0.09737539
Biol Process level 5	glycerol metabolic process	5	0.44%	0.09889698
Biol Process level 4	polyol metabolic process	5	0.44%	0.09980038

Table S8. Significantly enriched GO terms for genes with significantly higher gene expression in active bees, as compared to inactive bees.

GO Category	GO Term	Count	%	PValue
Biol Process level 2	behavior	39	7.20%	1.04E-07
Biol Process level 3	neurological system process	55	10.15%	2.86E-07
Mol Function level 2	substrate-specific transporter activity	65	11.99%	9.26E-07
Biol Process level 2	system process	55	10.15%	9.78E-07
Cell Component level 4	plasma membrane part	40	7.38%	1.22E-06
Cell Component level 3	plasma membrane part	40	7.38%	1.54E-06
Biol Process level 5	synaptic transmission	36	6.64%	1.57E-06
Cell Component level 5	plasma membrane part	40	7.38%	1.58E-06
Biol Process level 4	synaptic transmission	36	6.64%	2.89E-06
Biol Process level 1	multicellular organismal process	143	26.38%	3.08E-06
Mol Function level 2	transmembrane transporter activity	64	11.81%	3.99E-06
Mol Function level 3	substrate-specific transmembrane transporter activity	61	11.25%	5.18E-06
Biol Process level 1	response to stimulus	74	13.65%	5.71E-06
Mol Function level 1	transporter activity	74	13.65%	6.20E-06
Biol Process level 4	transmission of nerve impulse	41	7.56%	8.74E-06
Cell Component level 2	membrane	140	25.83%	1.21E-05
Cell Component level 3	membrane	140	25.83%	1.24E-05
Biol Process level 2	cell communication	113	20.85%	1.33E-05
Cell Component level 4	membrane part	107	19.74%	1.38E-05
Biol Process level 3	ion transport	39	7.20%	1.51E-05
Biol Process level 4	ion transport	39	7.20%	1.85E-05
Cell Component level 4	intrinsic to plasma membrane	24	4.43%	1.89E-05
Cell Component level 5	intrinsic to plasma membrane	24	4.43%	2.24E-05
Cell Component level 2	membrane part	107	19.74%	2.75E-05
Cell Component level 3	membrane part	107	19.74%	2.80E-05
Biol Process level 3	chemosensory behavior	15	2.77%	3.18E-05
Mol Function level 4	ion transmembrane transporter activity	50	9.23%	3.48E-05
Biol Process level 3	cell-cell signaling	42	7.75%	3.53E-05
Biol Process level 4	intracellular signaling cascade	52	9.59%	6.91E-05
Biol Process level 2	response to chemical stimulus	28	5.17%	1.11E-04
Cell Component level 4	plasma membrane	51	9.41%	1.13E-04
Biol Process level 5	cation transport	32	5.90%	1.20E-04
Biol Process level 1	establishment of localization	119	21.96%	1.23E-04
Cell Component level 3	plasma membrane	51	9.41%	1.44E-04
Mol Function level 5	cation transmembrane transporter activity	42	7.75%	1.48E-04
Cell Component level 5	integral to plasma membrane	22	4.06%	1.50E-04
Biol Process level 2	establishment of localization	119	21.96%	1.51E-04
Biol Process level 3	transport	117	21.59%	1.83E-04
Biol Process level 4	cation transport	32	5.90%	1.92E-04
Biol Process level 2	transport	117	21.59%	1.96E-04
Biol Process level 4	olfactory behavior	13	2.40%	2.75E-04
Biol Process level 3	learning and/or memory	14	2.58%	2.81E-04
Mol Function level 3	active transmembrane transporter activity	36	6.64%	3.08E-04
Cell Component level 4	intrinsic to membrane	75	13.84%	3.27E-04
Biol Process level 5	second-messenger-mediated signaling	12	2.21%	3.68E-04

Cell Component level 5	intrinsic to membrane	75	13.84%	4.51E-04
Cell Component level 3	intrinsic to membrane	75	13.84%	4.58E-04
Cell Component level 4	integral to membrane	74	13.65%	4.95E-04
Biol Process level 2	anatomical structure development	98	18.08%	6.02E-04
Cell Component level 5	integral to membrane	74	13.65%	6.77E-04
Biol Process level 1	rhythmic process	11	2.03%	6.79E-04
Biol Process level 1	localization	129	23.80%	7.38E-04
Biol Process level 5	olfactory learning	9	1.66%	8.24E-04
Biol Process level 3	system development	82	15.13%	8.33E-04
Biol Process level 2	multicellular organismal development	108	19.93%	0.0013859
Biol Process level 1	developmental process	123	22.69%	0.00175605
Biol Process level 3	signal transduction	87	16.05%	0.00184147
Biol Process level 2	response to abiotic stimulus	20	3.69%	0.00191741
Mol Function level 5	ATPase activity, coupled to transmembrane movement of ions	16	2.95%	0.00191758
Biol Process level 2	circadian rhythm	10	1.85%	0.00227139
Biol Process level 3	response to organic substance	7	1.29%	0.00235819
Biol Process level 3	cytoplasm organization and biogenesis	15	2.77%	0.00242516
Biol Process level 3	rhythmic behavior	9	1.66%	0.00278366
Biol Process level 2	rhythmic behavior	9	1.66%	0.00279722
Biol Process level 5	monovalent inorganic cation transport	21	3.87%	0.00287792
Biol Process level 5	regulation of tube size, open tracheal system	7	1.29%	0.00344583
Biol Process level 4	regulation of tube size, open tracheal system	7	1.29%	0.00390487
Mol Function level 4	hydrolase activity, catalyzing transmembrane movement	18	3.32%	0.00391829
Biol Process level 4	learning	9	1.66%	0.00407085
Biol Process level 5	tissue development	22	4.06%	0.00418252
Biol Process level 4	ATP synthesis coupled proton transport	10	1.85%	0.00428516
Biol Process level 3	organ development	63	11.62%	0.00489054
Biol Process level 3	tissue development	22	4.06%	0.00502332
Biol Process level 2	cell development	63	11.62%	0.00555809
Biol Process level 4	tissue development	22	4.06%	0.00560725
Cell Component level 4	proton-transporting two-sector ATPase complex	11	2.03%	0.00570918
Cell Component level 3	proton-transporting two-sector ATPase complex	11	2.03%	0.00592453
Biol Process level 5	ATP biosynthetic process	10	1.85%	0.00605735
Biol Process level 4	organ development	63	11.62%	0.00607755
Cell Component level 5	proton-transporting two-sector ATPase complex	11	2.03%	0.00616257
Mol Function level 2	vitamin binding	7	1.29%	0.00645055
Biol Process level 4	cell development	63	11.62%	0.00651843
Cell Component level 4	lipid particle	20	3.69%	0.00684821
Biol Process level 3	cell differentiation	71	13.10%	0.00744787
Cell Component level 5	lipid particle	20	3.69%	0.00767196
Biol Process level 5	phosphorylation	42	7.75%	0.00810737
Biol Process level 5	intercellular junction assembly	8	1.48%	0.00812269
Mol Function level 4	hydrolase activity, acting on carbon-nitrogen bonds in cyclic amides	4	0.74%	0.00816037
Biol Process level 3	circadian behavior	8	1.48%	0.00879981
Biol Process level 4	ATP metabolic process	10	1.85%	0.00899093
Biol Process level 4	circadian behavior	8	1.48%	0.00927774
Mol Function level 5	ATPase activity coupled to transmembrane movement of substances	17	3.14%	0.0095283
Biol Process level 3	adult behavior	11	2.03%	0.00963478
Biol Process level 5	protein complex assembly	16	2.95%	0.00974533
Biol Process level 2	cellular developmental process	71	13.10%	0.01001314

Biol Process level 5	regulation of tube size	7	1.29%	0.01042758
Biol Process level 3	carbohydrate metabolic process	32	5.90%	0.01049239
Mol Function level 1	catalytic activity	220	40.59%	0.01050471
Biol Process level 5	regulation of tube architecture, open tracheal system	8	1.48%	0.01073225
Biol Process level 3	regulation of tube size	7	1.29%	0.01118593
Biol Process level 5	synaptic vesicle transport	16	2.95%	0.01119718
Biol Process level 3	regulation of tube architecture, open tracheal system	8	1.48%	0.01160735
Biol Process level 4	regulation of tube size	7	1.29%	0.01172217
Biol Process level 4	protein complex assembly	16	2.95%	0.0121286
Biol Process level 5	regulation of neurotransmitter levels	19	3.51%	0.01271652
Biol Process level 5	regulation of tube length, open tracheal system	4	0.74%	0.01370086
Biol Process level 5	regulation of tube diameter, open tracheal system	4	0.74%	0.01370086
Biol Process level 4	synaptic vesicle transport	16	2.95%	0.01389492
Biol Process level 3	response to drug	4	0.74%	0.0142645
Biol Process level 3	regulation of tube length, open tracheal system	4	0.74%	0.0142645
Biol Process level 4	regulation of tube diameter, open tracheal system	4	0.74%	0.01466531
Biol Process level 3	regulation of neurotransmitter levels	19	3.51%	0.0147412
Biol Process level 5	endothelial cell development	5	0.92%	0.01496099
Biol Process level 4	response to light stimulus	11	2.03%	0.01506812
Biol Process level 3	locomotory behavior	14	2.58%	0.01510004
Mol Function level 2	transferase activity	75	13.84%	0.01538312
Biol Process level 3	endothelial cell development	5	0.92%	0.01573451
Biol Process level 4	intercellular junction assembly and maintenance	8	1.48%	0.01579282
Biol Process level 1	biological regulation	119	21.96%	0.01615847
Biol Process level 4	endothelial cell differentiation	5	0.92%	0.01628353
Biol Process level 3	secretion	27	4.98%	0.01628809
Biol Process level 2	secretion	27	4.98%	0.016455
Biol Process level 3	phosphorus metabolic process	49	9.04%	0.01716676
Mol Function level 4	primary active transmembrane transporter activity	19	3.51%	0.01737838
Biol Process level 5	secretory pathway	26	4.80%	0.01739449
Biol Process level 5	nucleoside triphosphate biosynthetic process	10	1.85%	0.01753073
Biol Process level 5	lipid biosynthetic process	14	2.58%	0.01782878
Cell Component level 5	microtubule cytoskeleton	16	2.95%	0.01794401
Mol Function level 4	ARF guanyl-nucleotide exchange factor activity	4	0.74%	0.01841673
Biol Process level 5	courtship behavior	7	1.29%	0.01863233
Biol Process level 5	secretion by cell	26	4.80%	0.01895758
Biol Process level 3	lipid biosynthetic process	14	2.58%	0.01999065
Biol Process level 5	regulated secretory pathway	17	3.14%	0.02004646
Biol Process level 5	neurotransmitter secretion	17	3.14%	0.02004646
Biol Process level 4	phosphate metabolic process	49	9.04%	0.02014568
Mol Function level 5	P-P-bond-hydrolysis-driven transmembrane transporter activity	19	3.51%	0.0203706
Biol Process level 3	secretory pathway	26	4.80%	0.02075888
Biol Process level 4	courtship behavior	7	1.29%	0.02083572
Biol Process level 4	memory	7	1.29%	0.02083572
Biol Process level 4	cofactor biosynthetic process	15	2.77%	0.02103134
Biol Process level 4	lipid biosynthetic process	14	2.58%	0.02150861
Biol Process level 3	instar larval or pupal development	38	7.01%	0.021839
Biol Process level 5	small GTPase mediated signal transduction	19	3.51%	0.02198384
Cell Component level 4	proton-transporting two-sector ATPase complex, catalytic domain	6	1.11%	0.02210687
Biol Process level 5	metal ion transport	17	3.14%	0.02244241

Cell Component level 3	proton-transporting two-sector ATPase complex, catalytic domain	6	1.11%	0.02251312
Biol Process level 1	reproduction	44	8.12%	0.02251738
Biol Process level 3	secretion by cell	26	4.80%	0.02257874
Biol Process level 5	nerve-nerve synaptic transmission	5	0.92%	0.02264817
Biol Process level 3	neurotransmitter secretion	17	3.14%	0.02281744
Mol Function level 4	kinase activity	40	7.38%	0.02297067
Biol Process level 4	cellular carbohydrate metabolic process	22	4.06%	0.02300154
Cell Component level 5	proton-transporting two-sector ATPase complex, catalytic domain	6	1.11%	0.02307959
Biol Process level 4	secretory pathway	26	4.80%	0.02309985
Biol Process level 3	tube morphogenesis	12	2.21%	0.02367407
Mol Function level 4	secondary active transmembrane transporter activity	17	3.14%	0.02455564
Mol Function level 3	transferase activity, on alkyl or aryl (other than methyl) groups	7	1.29%	0.02475034
Biol Process level 4	regulated secretory pathway	17	3.14%	0.02475881
Biol Process level 4	neurotransmitter secretion	17	3.14%	0.02475881
Biol Process level 4	instar larval or pupal development	38	7.01%	0.02493535
Biol Process level 5	behavioral response to ethanol	4	0.74%	0.02501843
Biol Process level 4	secretion by cell	26	4.80%	0.0250993
Biol Process level 4	tube morphogenesis	12	2.21%	0.0252631
Biol Process level 2	generation of a signal involved in cell-cell signaling	17	3.14%	0.02566659
Mol Function level 3	hydrolase activity, acting on acid anhydrides	45	8.30%	0.02595822
Biol Process level 3	maintenance of protein localization	4	0.74%	0.0260109
Biol Process level 2	maintenance of protein localization	4	0.74%	0.02605926
Biol Process level 4	response to ethanol	4	0.74%	0.02671695
Biol Process level 4	maintenance of protein localization	4	0.74%	0.02671695
Biol Process level 4	behavioral response to ethanol	4	0.74%	0.02671695
Biol Process level 4	generation of a signal involved in cell-cell signaling	17	3.14%	0.02763837
Biol Process level 3	cofactor metabolic process	23	4.24%	0.02800836
Biol Process level 3	post-embryonic development	38	7.01%	0.02820744
Biol Process level 2	post-embryonic development	38	7.01%	0.02855266
Biol Process level 5	autophagic cell death	9	1.66%	0.02893802
Biol Process level 5	salivary gland histolysis	9	1.66%	0.02893802
Biol Process level 5	proton transport	10	1.85%	0.02944513
Mol Function level 2	lipid binding	12	2.21%	0.03078937
Biol Process level 3	hydrogen transport	10	1.85%	0.03203699
Biol Process level 5	synaptic vesicle priming	5	0.92%	0.03234102
Biol Process level 5	male mating behavior	5	0.92%	0.03234102
Biol Process level 5	male courtship behavior	5	0.92%	0.03234102
Biol Process level 3	behavioral interaction between organisms	7	1.29%	0.03241047
Biol Process level 3	mating behavior	7	1.29%	0.03241047
Biol Process level 2	behavioral interaction between organisms	7	1.29%	0.03251182
Mol Function level 5	manganese ion binding	7	1.29%	0.03256421
Biol Process level 1	maintenance of localization	5	0.92%	0.03342065
Biol Process level 4	mating behavior	7	1.29%	0.03382869
Biol Process level 4	hydrogen transport	10	1.85%	0.03386635
Biol Process level 4	proton transport	10	1.85%	0.03386635
Biol Process level 2	maintenance of localization	5	0.92%	0.03398946
Biol Process level 5	histolysis	9	1.66%	0.0344067
Biol Process level 3	regulation of catalytic activity	13	2.40%	0.03467086
Biol Process level 4	male mating behavior	5	0.92%	0.03502784
Cell Component level 4	sodium:potassium-exchanging ATPase complex	3	0.55%	0.03664332

Mol Function level 2	molecular adaptor activity	4	0.74%	0.03690546
Cell Component level 4	cytoskeleton	23	4.24%	0.03690547
Biol Process level 3	response to radiation	11	2.03%	0.03692167
Cell Component level 3	sodium:potassium-exchanging ATPase complex	3	0.55%	0.03693877
Biol Process level 4	nervous system development	40	7.38%	0.03720745
Cell Component level 5	sodium:potassium-exchanging ATPase complex	3	0.55%	0.03741441
Cell Component level 3	receptor complex	4	0.74%	0.03757044
Biol Process level 5	tricarboxylic acid cycle	7	1.29%	0.03778659
Biol Process level 5	aerobic respiration	7	1.29%	0.03778659
Biol Process level 4	open tracheal system development	15	2.77%	0.03802547
Biol Process level 5	maintenance of imaginal disc-derived wing hair orientation	3	0.55%	0.03865436
Biol Process level 5	purine nucleotide biosynthetic process	11	2.03%	0.0388072
Biol Process level 4	histolysis	9	1.66%	0.03907348
Biol Process level 2	response to external stimulus	15	2.77%	0.03968662
Mol Function level 3	carbon-carbon lyase activity	7	1.29%	0.03985494
Biol Process level 4	sensory perception	14	2.58%	0.03994635
Biol Process level 5	ectoderm development	13	2.40%	0.03996766
Biol Process level 5	regulation of tube diameter	4	0.74%	0.03999906
Cell Component level 5	cytoskeleton	23	4.24%	0.04093648
Biol Process level 3	regulation of tube diameter	4	0.74%	0.0415281
Biol Process level 5	fatty acid biosynthetic process	6	1.11%	0.04189856
Biol Process level 4	cellular respiration	7	1.29%	0.04192997
Biol Process level 4	regulation of tube diameter	4	0.74%	0.04261634
Biol Process level 1	reproductive process	13	2.40%	0.04282815
Mol Function level 3	transferase activity, transferring phosphorus-containing groups	46	8.49%	0.04307663
Mol Function level 5	gated channel activity	13	2.40%	0.04316098
Biol Process level 2	reproductive process	13	2.40%	0.04428687
Mol Function level 4	prenyltransferase activity	5	0.92%	0.04563853
Biol Process level 4	fatty acid biosynthetic process	6	1.11%	0.04588489
Biol Process level 5	acetyl-CoA metabolic process	7	1.29%	0.04621666
Biol Process level 5	coenzyme catabolic process	7	1.29%	0.04621666
Biol Process level 3	tube development	12	2.21%	0.0462743
Biol Process level 2	regulation of a molecular function	14	2.58%	0.04683963
Biol Process level 4	ectoderm development	13	2.40%	0.04695952
Biol Process level 5	monosaccharide catabolic process	8	1.48%	0.04761862
Biol Process level 4	female gamete generation	31	5.72%	0.0476202

Table S9. Significantly enriched GO terms for genes with significantly higher gene expression in inactive bees, as compared to active bees.

GO Category	GO Term	Count	%	PValue
Mol Function level 2	structural constituent of ribosome	85	14.14%	1.07E-46
Cell Component level 3	ribosome	84	13.98%	3.34E-45
Cell Component level 3	ribosomal subunit	76	12.65%	1.12E-42
Cell Component level 4	ribosome	84	13.98%	1.86E-42
Cell Component level 5	ribosome	84	13.98%	1.17E-41
Cell Component level 4	ribosomal subunit	76	12.65%	3.61E-40
Cell Component level 5	ribosomal subunit	76	12.65%	1.92E-39
Cell Component level 2	ribonucleoprotein complex	99	16.47%	1.99E-38
Cell Component level 3	ribonucleoprotein complex	99	16.47%	2.07E-38
Cell Component level 4	ribonucleoprotein complex	99	16.47%	2.23E-35
Cell Component level 5	ribonucleoprotein complex	99	16.47%	1.70E-34
Biol Process level 2	translation	93	15.47%	3.68E-31
Cell Component level 4	cytosolic ribosome (sensu Eukaryota)	48	7.99%	4.24E-31
Cell Component level 5	cytosolic ribosome (sensu Eukaryota)	48	7.99%	1.25E-30
Biol Process level 4	translation	93	15.47%	1.36E-30
Biol Process level 5	translation	93	15.47%	4.69E-30
Cell Component level 1	macromolecular complex	192	31.95%	1.26E-29
Cell Component level 2	intracellular organelle part	188	31.28%	1.67E-29
Cell Component level 3	intracellular organelle part	188	31.28%	1.78E-29
Cell Component level 2	organelle part	188	31.28%	2.44E-29
Cell Component level 1	organelle part	188	31.28%	6.37E-29
Cell Component level 3	cytoplasmic part	188	31.28%	1.83E-27
Cell Component level 4	cytosolic part	52	8.65%	6.27E-27
Mol Function level 1	structural molecule activity	90	14.98%	7.06E-27
Cell Component level 5	cytosolic part	52	8.65%	1.94E-26
Cell Component level 3	cytoplasm	206	34.28%	7.56E-25
Cell Component level 4	intracellular organelle part	188	31.28%	9.90E-25
Biol Process level 3	cellular biosynthetic process	121	20.13%	1.28E-23
Biol Process level 3	macromolecule biosynthetic process	98	16.31%	1.46E-23
Cell Component level 5	intracellular organelle part	188	31.28%	2.56E-23
Cell Component level 4	cytoplasmic part	188	31.28%	8.61E-23
Cell Component level 5	cytoplasmic part	188	31.28%	2.08E-21
Cell Component level 4	large ribosomal subunit	44	7.32%	1.99E-20
Cell Component level 5	large ribosomal subunit	44	7.32%	5.05E-20
Cell Component level 4	cytoplasm	206	34.28%	6.94E-20
Cell Component level 3	small ribosomal subunit	33	5.49%	1.12E-19
Cell Component level 3	mitochondrial part	82	13.64%	1.17E-19
Biol Process level 2	biosynthetic process	124	20.63%	6.51E-19
Cell Component level 4	small ribosomal subunit	33	5.49%	1.39E-18
Cell Component level 5	cytoplasm	206	34.28%	2.09E-18
Cell Component level 5	small ribosomal subunit	33	5.49%	2.86E-18
Cell Component level 2	intracellular part	261	43.43%	3.81E-18
Cell Component level 3	intracellular part	261	43.43%	4.18E-18
Cell Component level 5	cytosolic large ribosomal subunit (sensu Eukaryota)	29	4.83%	1.53E-17
Cell Component level 4	mitochondrial part	82	13.64%	1.90E-17

Cell Component level 2	non-membrane-bound organelle	100	16.64%	2.50E-17
Cell Component level 3	intracellular non-membrane-bound organelle	100	16.64%	2.57E-17
Cell Component level 4	mitochondrion	92	15.31%	7.88E-17
Cell Component level 5	mitochondrial part	82	13.64%	8.08E-17
Cell Component level 2	intracellular organelle	230	38.27%	3.09E-16
Cell Component level 3	intracellular organelle	230	38.27%	3.23E-16
Cell Component level 5	mitochondrion	92	15.31%	4.86E-16
Cell Component level 4	cytosol	58	9.65%	5.39E-16
Cell Component level 1	organelle	230	38.27%	1.28E-15
Cell Component level 5	cytosol	58	9.65%	1.60E-15
Cell Component level 4	intracellular non-membrane-bound organelle	100	16.64%	1.08E-14
Cell Component level 2	intracellular	267	44.43%	3.07E-14
Cell Component level 3	intracellular	267	44.43%	3.37E-14
Cell Component level 5	intracellular non-membrane-bound organelle	100	16.64%	5.40E-14
Cell Component level 4	cytosolic small ribosomal subunit (sensu Eukaryota)	19	3.16%	1.51E-12
Cell Component level 3	mitochondrial membrane part	37	6.16%	2.21E-12
Cell Component level 5	cytosolic small ribosomal subunit (sensu Eukaryota)	19	3.16%	2.29E-12
Biol Process level 2	cellular metabolic process	279	46.42%	3.06E-12
Cell Component level 4	intracellular part	261	43.43%	6.11E-12
Cell Component level 4	mitochondrial membrane part	37	6.16%	2.63E-11
Cell Component level 4	organellar ribosome	30	4.99%	3.11E-11
Cell Component level 4	mitochondrial ribosome	30	4.99%	3.11E-11
Cell Component level 4	intracellular organelle	230	38.27%	3.83E-11
Cell Component level 5	mitochondrial membrane part	37	6.16%	5.29E-11
Cell Component level 5	organellar ribosome	30	4.99%	5.62E-11
Cell Component level 5	mitochondrial ribosome	30	4.99%	5.62E-11
Biol Process level 1	gene expression	137	22.80%	6.15E-11
Biol Process level 1	metabolic process	296	49.25%	1.02E-10
Biol Process level 3	electron transport	41	6.82%	1.37E-10
Cell Component level 3	mitochondrial lumen	38	6.32%	2.83E-10
Cell Component level 5	intracellular organelle	230	38.27%	1.17E-09
Cell Component level 2	protein complex	128	21.30%	1.71E-09
Cell Component level 4	mitochondrial lumen	38	6.32%	3.06E-09
Cell Component level 4	mitochondrial matrix	38	6.32%	3.06E-09
Cell Component level 5	mitochondrial lumen	38	6.32%	5.96E-09
Cell Component level 5	mitochondrial matrix	38	6.32%	5.96E-09
Cell Component level 3	mitochondrial envelope	44	7.32%	1.05E-08
Mol Function level 2	oxidoreductase activity	67	11.15%	1.41E-08
Cell Component level 3	mitochondrial membrane	41	6.82%	1.65E-08
Biol Process level 3	oxidative phosphorylation	30	4.99%	4.22E-08
Cell Component level 3	organelle inner membrane	38	6.32%	5.04E-08
Cell Component level 4	mitochondrial respiratory chain	24	3.99%	5.41E-08
Cell Component level 5	mitochondrial respiratory chain	24	3.99%	8.49E-08
Cell Component level 2	organelle lumen	64	10.65%	8.98E-08
Cell Component level 3	organelle lumen	64	10.65%	9.12E-08
Cell Component level 1	membrane-enclosed lumen	64	10.65%	9.50E-08
Cell Component level 4	mitochondrial envelope	44	7.32%	1.27E-07
Cell Component level 4	mitochondrial membrane	41	6.82%	1.73E-07
Biol Process level 4	ATP synthesis coupled electron transport	21	3.49%	1.88E-07
Biol Process level 5	organelle ATP synthesis coupled electron transport	21	3.49%	2.53E-07

Cell Component level 5	mitochondrial envelope	44	7.32%	2.54E-07
Cell Component level 5	mitochondrial membrane	41	6.82%	3.32E-07
Cell Component level 4	mitochondrial inner membrane	38	6.32%	4.46E-07
Cell Component level 4	organelle inner membrane	38	6.32%	4.46E-07
Biol Process level 2	generation of precursor metabolites and energy	43	7.15%	5.32E-07
Cell Component level 5	mitochondrial inner membrane	38	6.32%	8.17E-07
Cell Component level 5	organelle inner membrane	38	6.32%	8.17E-07
Biol Process level 4	cellular protein metabolic process	149	24.79%	1.10E-06
Cell Component level 4	organellar small ribosomal subunit	14	2.33%	1.73E-06
Cell Component level 4	mitochondrial small ribosomal subunit	14	2.33%	1.73E-06
Biol Process level 3	protein metabolic process	152	25.29%	1.97E-06
Cell Component level 2	organelle envelope	45	7.49%	2.25E-06
Cell Component level 3	organelle envelope	45	7.49%	2.28E-06
Cell Component level 5	organellar small ribosomal subunit	14	2.33%	2.28E-06
Cell Component level 5	mitochondrial small ribosomal subunit	14	2.33%	2.28E-06
Cell Component level 1	envelope	45	7.49%	2.33E-06
Mol Function level 3	electron carrier activity	23	3.83%	3.45E-06
Biol Process level 3	cellular macromolecule metabolic process	149	24.79%	3.67E-06
Cell Component level 2	organelle membrane	55	9.15%	5.45E-06
Cell Component level 3	organelle membrane	55	9.15%	5.52E-06
Cell Component level 4	organelle envelope	45	7.49%	2.10E-05
Mol Function level 5	cytochrome-c oxidase activity	7	1.16%	3.84E-05
Cell Component level 5	organelle envelope	45	7.49%	3.85E-05
Mol Function level 4	cytochrome-c oxidase activity	7	1.16%	4.37E-05
Mol Function level 4	oxidoreductase activity, heme donors and oxygen acceptor	7	1.16%	4.37E-05
Mol Function level 3	oxidoreductase activity, acting on heme group of donors	7	1.16%	4.46E-05
Mol Function level 3	heme-copper terminal oxidase activity	7	1.16%	4.46E-05
Mol Function level 4	NADH dehydrogenase activity	12	2.00%	6.45E-05
Cell Component level 4	organelle membrane	55	9.15%	6.48E-05
Biol Process level 5	protein import into mitochondrion	7	1.16%	6.69E-05
Mol Function level 3	oxidoreductase activity, acting on NADH or NADPH	13	2.16%	1.15E-04
Cell Component level 4	mitochondrial large ribosomal subunit	15	2.50%	1.20E-04
Biol Process level 5	inner mitochondrial membrane organization and biogenesis	6	1.00%	1.34E-04
Cell Component level 5	organellar large ribosomal subunit	15	2.50%	1.56E-04
Cell Component level 5	mitochondrial large ribosomal subunit	15	2.50%	1.56E-04
Biol Process level 4	mitochondrial membrane organization and biogenesis	6	1.00%	3.88E-04
Biol Process level 5	mitochondrial membrane organization and biogenesis	6	1.00%	4.24E-04
Mol Function level 5	P-P-bond-hydrolysis-driven transmembrane transport activity	8	1.33%	4.51E-04
Mol Function level 4	P-P-bond-hydrolysis-driven transmembrane transport activity	8	1.33%	5.19E-04
Mol Function level 4	macromolecule transmembrane transporter activity	8	1.33%	5.19E-04
Mol Function level 4	protein transmembrane transporter activity	9	1.50%	5.54E-04
Mol Function level 3	protein transmembrane transporter activity	9	1.50%	5.67E-04
Cell Component level 3	respiratory chain complex I	12	2.00%	6.00E-04
Cell Component level 3	NADH dehydrogenase complex (quinone)	12	2.00%	6.00E-04
Mol Function level 4	rRNA binding	6	1.00%	6.58E-04
Biol Process level 4	mitochondrial electron transport, NADH to ubiquinone	12	2.00%	7.01E-04
Cell Component level 3	mitochondrial intermembrane space protein transporter	5	0.83%	9.45E-04
Biol Process level 1	cellular process	332	55.24%	9.61E-04
Cell Component level 3	respiratory chain complex IV	6	1.00%	0.00102126
Cell Component level 3	intracellular membrane-bound organelle	171	28.45%	0.00109474

Cell Component level 2	membrane-bound organelle	171	28.45%	0.00118101
Cell Component level 4	NADH dehydrogenase complex (quinone)	12	2.00%	0.00123128
Cell Component level 4	respiratory chain complex I	12	2.00%	0.00123128
Cell Component level 4	mitochondrial respiratory chain complex I	12	2.00%	0.00123128
Mol Function level 5	NADH dehydrogenase (quinone) activity	9	1.50%	0.00125405
Biol Process level 2	primary metabolic process	243	40.43%	0.00129923
Cell Component level 4	mitochondrial intermembrane space protein transporter	5	0.83%	0.00131273
Biol Process level 5	protein targeting to mitochondrion	9	1.50%	0.00139812
Cell Component level 5	mitochondrial intermembrane space protein transporter	5	0.83%	0.00144083
Cell Component level 3	mitochondrial inner membrane presequence translocase	7	1.16%	0.0014445
Mol Function level 4	oxidoreductase activity, with NADH and others as acceptor	9	1.50%	0.00145735
Cell Component level 5	respiratory chain complex I	12	2.00%	0.00150501
Cell Component level 5	NADH dehydrogenase complex (quinone)	12	2.00%	0.00150501
Cell Component level 5	mitochondrial respiratory chain complex I	12	2.00%	0.00150501
Cell Component level 4	respiratory chain complex IV	6	1.00%	0.0015139
Cell Component level 4	mitochondrial respiratory chain complex IV	6	1.00%	0.0015139
Cell Component level 5	respiratory chain complex IV	6	1.00%	0.0016919
Cell Component level 5	mitochondrial respiratory chain complex IV	6	1.00%	0.0016919
Cell Component level 4	mitochondrial inner membrane presequence translocase	7	1.16%	0.00226036
Cell Component level 5	mitochondrial inner membrane presequence translocase	7	1.16%	0.0025639
Biol Process level 2	macromolecule metabolic process	207	34.44%	0.00292304
Mol Function level 3	protein transporter activity	11	1.83%	0.00461324
Biol Process level 4	mitochondrial electron transport, cytochrome c to oxygen	5	0.83%	0.00505213
Mol Function level 5	ubiquinol-cytochrome-c reductase activity	5	0.83%	0.00614869
Cell Component level 4	lipid particle	22	3.66%	0.00636429
Mol Function level 4	oxidoreductase, diphenol donors, cytochrome as acceptor	5	0.83%	0.0066464
Cell Component level 5	lipid particle	22	3.66%	0.00837595
Mol Function level 3	oxidoreductase, acting on diphenols and related substances	5	0.83%	0.01037018
Cell Component level 3	endoplasmic reticulum membrane	10	1.66%	0.01082283
Cell Component level 3	nuclear envelope-endoplasmic reticulum network	10	1.66%	0.01082283
Cell Component level 3	organelle envelope lumen	5	0.83%	0.01601095
Cell Component level 4	nuclear envelope-endoplasmic reticulum network	10	1.66%	0.01832549
Cell Component level 4	endoplasmic reticulum membrane	10	1.66%	0.01832549
Biol Process level 4	mitochondrial transport	9	1.50%	0.01991573
Cell Component level 5	nuclear envelope-endoplasmic reticulum network	10	1.66%	0.02119503
Cell Component level 5	endoplasmic reticulum membrane	10	1.66%	0.02119503
Cell Component level 4	organelle envelope lumen	5	0.83%	0.02145007
Cell Component level 4	mitochondrial intermembrane space	5	0.83%	0.02145007
Biol Process level 5	mitochondrial transport	9	1.50%	0.02203223
Cell Component level 5	organelle envelope lumen	5	0.83%	0.0232864
Cell Component level 5	mitochondrial intermembrane space	5	0.83%	0.0232864
Mol Function level 5	protein-methionine-R-oxide reductase activity	3	0.50%	0.02395373
Cell Component level 3	respiratory chain complex III	5	0.83%	0.02419272
Cell Component level 3	endoplasmic reticulum part	11	1.83%	0.0242213
Mol Function level 5	DNA-directed RNA polymerase activity	6	1.00%	0.02543036
Biol Process level 3	oxygen and reactive oxygen species metabolic process	5	0.83%	0.03145202
Cell Component level 4	respiratory chain complex III	5	0.83%	0.03212523
Cell Component level 4	mitochondrial respiratory chain complex III	5	0.83%	0.03212523
Cell Component level 3	proteasome complex (sensu Eukaryota)	10	1.66%	0.03285816
Cell Component level 4	snRNP U6	4	0.67%	0.03313642

Mol Function level 5	P-P-bond-hydrolysis-driven transmembrane transporter activity	14	2.33%	0.03463696
Cell Component level 5	respiratory chain complex III	5	0.83%	0.0347827
Cell Component level 5	mitochondrial respiratory chain complex III	5	0.83%	0.0347827
Cell Component level 5	snRNP U6	4	0.67%	0.03533276
Cell Component level 3	small nuclear ribonucleoprotein complex	10	1.66%	0.0383595
Mol Function level 4	primary active transmembrane transporter activity	14	2.33%	0.04063478
Cell Component level 4	endoplasmic reticulum part	11	1.83%	0.04071234
Mol Function level 3	oxidoreductase activity, acting on sulfur group of donors	4	0.67%	0.0456782
Mol Function level 3	oxidoreductase activity, acting on the CH-CH group of donors	5	0.83%	0.04622646
Cell Component level 5	endoplasmic reticulum part	11	1.83%	0.04691973
Cell Component level 3	spliceosome	12	2.00%	0.04753455

Table S10. Significantly enriched GO terms for genes differentially expressed between anticipating bees with different spatiotemporal memories (tAM-cAM contrasted with tPM-cPM).

GO Category	GO Term	Count	%	PValue
Biol Process level 3	lipid metabolic process	42	5.75%	8.05E-04
Mol Function level 2	structural constituent of ribosome	35	4.79%	0.00200062
Cell Component level 3	cytoplasm	192	26.27%	0.00208546
Biol Process level 5	monosaccharide catabolic process	12	1.64%	0.00268226
Biol Process level 5	hexose metabolic process	17	2.33%	0.00317228
Cell Component level 4	cytosolic part	24	3.28%	0.00351826
Mol Function level 4	calcium ion binding	26	3.56%	0.00355555
Mol Function level 3	active transmembrane transporter activity	38	5.20%	0.00356755
Biol Process level 4	alcohol catabolic process	12	1.64%	0.0038089
Cell Component level 5	cytosolic part	24	3.28%	0.00398486
Biol Process level 3	carbohydrate metabolic process	41	5.61%	0.00400294
Cell Component level 4	cytoplasm	192	26.27%	0.00410058
Cell Component level 3	ribosome	35	4.79%	0.00436265
Biol Process level 4	carbohydrate catabolic process	14	1.92%	0.00568365
Cell Component level 4	ribosome	35	4.79%	0.00569202
Cell Component level 4	cytosol	37	5.06%	0.00628659
Biol Process level 5	pyrimidine nucleotide biosynthetic process	6	0.82%	0.00644245
Cell Component level 5	ribosome	35	4.79%	0.00662572
Cell Component level 5	cytoplasm	192	26.27%	0.00670151
Mol Function level 5	anion transmembrane transporter activity	13	1.78%	0.00716578
Biol Process level 5	monosaccharide metabolic process	17	2.33%	0.0072322
Cell Component level 5	cytosol	37	5.06%	0.00734672
Biol Process level 4	monosaccharide metabolic process	17	2.33%	0.0076026
Biol Process level 5	cellular carbohydrate catabolic process	13	1.78%	0.00761115
Biol Process level 3	cellular biosynthetic process	87	11.90%	0.00761492
Biol Process level 3	alcohol metabolic process	23	3.15%	0.00916836
Biol Process level 4	cellular carbohydrate metabolic process	28	3.83%	0.00958695
Cell Component level 3	ribosomal subunit	30	4.10%	0.00971101
Biol Process level 4	cellular lipid metabolic process	32	4.38%	0.00974306
Biol Process level 3	cellular lipid metabolic process	32	4.38%	0.01018456
Biol Process level 2	biosynthetic process	99	13.54%	0.01175508
Mol Function level 5	glutathione peroxidase activity	4	0.55%	0.0118742
Cell Component level 4	ribosomal subunit	30	4.10%	0.01219923
Biol Process level 2	response to chemical stimulus	27	3.69%	0.0128572
Mol Function level 3	glutathione peroxidase activity	4	0.55%	0.01299465
Biol Process level 5	pyrimidine base metabolic process	7	0.96%	0.01334113
Mol Function level 4	secondary active transmembrane transporter activity	20	2.74%	0.01334127
Biol Process level 2	cell adhesion	25	3.42%	0.01338154
Cell Component level 5	ribosomal subunit	30	4.10%	0.01387391
Cell Component level 4	cytosolic ribosome (sensu Eukaryota)	18	2.46%	0.01402308
Biol Process level 1	biological adhesion	25	3.42%	0.01492475
Cell Component level 5	cytosolic ribosome (sensu Eukaryota)	18	2.46%	0.01537466
Cell Component level 4	cullin-RING ubiquitin ligase complex	5	0.68%	0.01595386
Cell Component level 5	cullin-RING ubiquitin ligase complex	5	0.68%	0.01651868
Cell Component level 5	SCF ubiquitin ligase complex	5	0.68%	0.01651868

Mol Function level 2	isomerase activity	15	2.05%	0.01666654
Biol Process level 3	chemosensory behavior	12	1.64%	0.01771286
Mol Function level 2	transmembrane transporter activity	64	8.76%	0.01828169
Biol Process level 4	extracellular transport	7	0.96%	0.01984096
Biol Process level 3	extracellular transport	7	0.96%	0.02008912
Cell Component level 3	cytoplasmic part	155	21.20%	0.02155105
Mol Function level 3	oxidoreductase activity, acting on peroxide	5	0.68%	0.02350999
Mol Function level 2	peroxidase activity	5	0.68%	0.02381842
Mol Function level 4	peroxidase activity	5	0.68%	0.02407181
Mol Function level 3	identical protein binding	16	2.19%	0.02650256
Biol Process level 4	reproductive behavior in a multicellular organism	7	0.96%	0.02767539
Mol Function level 1	antioxidant activity	6	0.82%	0.02785755
Biol Process level 3	reproductive behavior in a multicellular organism	7	0.96%	0.02800974
Mol Function level 4	oxidoreductase activity, acting on aldehyde or oxo group	4	0.55%	0.02932374
Biol Process level 3	macromolecule biosynthetic process	61	8.34%	0.0302684
Biol Process level 2	catabolic process	38	5.20%	0.03252222
Biol Process level 2	behavior	30	4.10%	0.03322274
Mol Function level 5	glucuronosyltransferase activity	5	0.68%	0.03353392
Biol Process level 4	cellular macromolecule catabolic process	22	3.01%	0.03652507
Cell Component level 4	cytoplasmic part	155	21.20%	0.03687947
Biol Process level 5	translation	47	6.43%	0.04127017
Biol Process level 4	translation	47	6.43%	0.04468114
Biol Process level 3	macromolecule catabolic process	25	3.42%	0.0455264
Biol Process level 2	translation	47	6.43%	0.04614265
Biol Process level 3	cellular catabolic process	34	4.65%	0.04654915
Mol Function level 5	symporter activity	11	1.50%	0.04768353

Table S11. Significantly enriched GO terms for genes more highly expressed in morning-anticipating bees (tAM-cAM) in contrast to afternoon-anticipating bees (tPM-cPM).

GO Category	GO Term	Count	%	PValue
Biol Process level 3	lipid metabolic process	28	7.98%	1.81E-05
Biol Process level 4	cellular lipid metabolic process	21	5.98%	6.38E-04
Biol Process level 3	cellular lipid metabolic process	21	5.98%	7.98E-04
Biol Process level 5	pyrimidine base metabolic process	6	1.71%	0.00161489
Biol Process level 5	prosthetic group metabolic process	5	1.42%	0.00456538
Biol Process level 3	prosthetic group metabolic process	5	1.42%	0.0054897
Biol Process level 2	behavior	18	5.13%	0.01193817
Biol Process level 5	lipid biosynthetic process	10	2.85%	0.01588302
Mol Function level 3	identical protein binding	10	2.85%	0.01641969
Biol Process level 2	response to chemical stimulus	15	4.27%	0.01936687
Biol Process level 4	lipid biosynthetic process	10	2.85%	0.01958843
Biol Process level 2	cell adhesion	14	3.99%	0.02000621
Biol Process level 5	nucleobase metabolic process	7	1.99%	0.0209387
Biol Process level 1	biological adhesion	14	3.99%	0.02110614
Mol Function level 2	isomerase activity	9	2.56%	0.02124222
Biol Process level 3	lipid biosynthetic process	10	2.85%	0.02158158
Biol Process level 2	response to abiotic stimulus	12	3.42%	0.02255012
Biol Process level 4	nucleobase metabolic process	7	1.99%	0.024441
Cell Component level 4	endoplasmic reticulum	15	4.27%	0.02527298
Cell Component level 5	endoplasmic reticulum	15	4.27%	0.02821051
Biol Process level 4	chromosome organization and biogenesis	13	3.70%	0.03307619
Biol Process level 5	isoprenoid metabolic process	4	1.14%	0.03342711
Biol Process level 4	isoprenoid metabolic process	4	1.14%	0.03656256
Mol Function level 5	iron ion binding	9	2.56%	0.04602303
Biol Process level 5	central nervous system development	10	2.85%	0.04693733

Table S12. Significantly enriched GO terms for genes more highly expressed in afternoon-anticipating bees (tPM-cPM) in contrast to morning-anticipating bees (tAM-cAM).

GO Category	GO Term	Count	%	PValue
Cell Component level 4	cytosolic part	21	5.53%	1.09E-05
Cell Component level 5	cytosolic part	21	5.53%	1.18E-05
Mol Function level 2	structural constituent of ribosome	27	7.11%	4.31E-05
Cell Component level 4	ribosome	27	7.11%	9.13E-05
Cell Component level 3	ribosome	27	7.11%	9.74E-05
Cell Component level 5	ribosome	27	7.11%	9.89E-05
Cell Component level 4	cytosol	28	7.37%	1.33E-04
Cell Component level 5	cytosol	28	7.37%	1.45E-04
Cell Component level 4	cytosolic ribosome (sensu Eukaryota)	16	4.21%	1.55E-04
Cell Component level 4	ribosomal subunit	24	6.32%	1.61E-04
Cell Component level 5	cytosolic ribosome (sensu Eukaryota)	16	4.21%	1.65E-04
Cell Component level 3	ribosomal subunit	24	6.32%	1.70E-04
Cell Component level 5	ribosomal subunit	24	6.32%	1.74E-04
Biol Process level 5	hexose metabolic process	14	3.68%	2.86E-04
Biol Process level 4	cellular carbohydrate metabolic process	22	5.79%	3.31E-04
Biol Process level 3	carbohydrate metabolic process	29	7.63%	3.95E-04
Biol Process level 3	cellular biosynthetic process	57	15.00%	5.21E-04
Biol Process level 5	monosaccharide catabolic process	10	2.63%	5.31E-04
Biol Process level 4	monosaccharide metabolic process	14	3.68%	5.32E-04
Biol Process level 3	alcohol metabolic process	18	4.74%	5.84E-04
Biol Process level 4	alcohol catabolic process	10	2.63%	6.13E-04
Biol Process level 5	monosaccharide metabolic process	14	3.68%	6.33E-04
Cell Component level 4	ribonucleoprotein complex	34	8.95%	9.65E-04
Cell Component level 2	ribonucleoprotein complex	34	8.95%	0.00102731
Cell Component level 3	ribonucleoprotein complex	34	8.95%	0.00103501
Cell Component level 5	ribonucleoprotein complex	34	8.95%	0.00104963
Mol Function level 3	active transmembrane transporter activity	26	6.84%	0.00116642
Cell Component level 4	cytoplasm	112	29.47%	0.00129285
Cell Component level 5	cytoplasm	112	29.47%	0.00148189
Biol Process level 4	carbohydrate catabolic process	11	2.89%	0.00148397
Biol Process level 3	macromolecule biosynthetic process	42	11.05%	0.00156071
Biol Process level 2	translation	34	8.95%	0.00164901
Biol Process level 4	translation	34	8.95%	0.00196887
Cell Component level 3	cytoplasm	112	29.47%	0.00215171
Biol Process level 5	translation	34	8.95%	0.0026455
Mol Function level 1	structural molecule activity	34	8.95%	0.00271773
Cell Component level 4	cytoplasmic part	94	24.74%	0.00320299
Biol Process level 2	biosynthetic process	61	16.05%	0.00344974
Biol Process level 5	cellular carbohydrate catabolic process	10	2.63%	0.00354369
Cell Component level 5	cytoplasmic part	94	24.74%	0.00365441
Cell Component level 3	cytoplasmic part	94	24.74%	0.00431977
Cell Component level 4	mitochondrial envelope	24	6.32%	0.00460593
Cell Component level 4	large ribosomal subunit	15	3.95%	0.00461153
Cell Component level 5	cytosolic large ribosomal subunit (sensu Eukaryota)	10	2.63%	0.00461654
Cell Component level 3	mitochondrial envelope	24	6.32%	0.00475149

Cell Component level 4	intracellular non-membrane-bound organelle	48	12.63%	0.00481766
Cell Component level 5	large ribosomal subunit	15	3.95%	0.00483338
Cell Component level 5	mitochondrial envelope	24	6.32%	0.00490479
Cell Component level 2	non-membrane-bound organelle	48	12.63%	0.00521769
Cell Component level 3	intracellular non-membrane-bound organelle	48	12.63%	0.00526177
Cell Component level 5	intracellular non-membrane-bound organelle	48	12.63%	0.00528654
Mol Function level 4	oxidoreductase, aldehyde or oxo donors, disulfide acceptor	4	1.05%	0.00554199
Mol Function level 2	transmembrane transporter activity	41	10.79%	0.00562482
Mol Function level 5	ATPase, coupled to transmembrane movement of substances	13	3.42%	0.00581967
Cell Component level 4	small ribosomal subunit	11	2.89%	0.00626725
Cell Component level 3	small ribosomal subunit	11	2.89%	0.00631698
Cell Component level 5	small ribosomal subunit	11	2.89%	0.00650607
Mol Function level 4	ion transmembrane transporter activity	30	7.89%	0.00808737
Mol Function level 4	hydrolase, on acid anhydrides, transmembrane movement	13	3.42%	0.00923936
Cell Component level 4	mitochondrial part	34	8.95%	0.00996965
Cell Component level 3	mitochondrial part	34	8.95%	0.01041806
Mol Function level 5	anion transmembrane transporter activity	9	2.37%	0.01064342
Cell Component level 5	mitochondrial part	34	8.95%	0.01072279
Biol Process level 2	cellular metabolic process	180	47.37%	0.01077897
Biol Process level 1	metabolic process	196	51.58%	0.01267637
Mol Function level 5	NADH dehydrogenase (quinone) activity	7	1.84%	0.01387875
Cell Component level 4	mitochondrion	39	10.26%	0.01643238
Biol Process level 4	alcohol biosynthetic process	4	1.05%	0.01673675
Biol Process level 4	female germ-line cyst formation	4	1.05%	0.01673675
Mol Function level 4	oxidoreductase activity, acting on NADH or similar as receptor	7	1.84%	0.01678527
Biol Process level 5	monosaccharide biosynthetic process	4	1.05%	0.01760611
Biol Process level 5	female germ-line cyst formation	4	1.05%	0.01760611
Cell Component level 5	mitochondrion	39	10.26%	0.0177219
Mol Function level 5	nucleoside diphosphate kinase activity	3	0.79%	0.0193658
Biol Process level 3	macromolecule catabolic process	17	4.47%	0.01979296
Mol Function level 4	secondary active transmembrane transporter activity	13	3.42%	0.02012102
Mol Function level 5	ATPase activity, coupled to transmembrane movement of ions	10	2.63%	0.02160631
Mol Function level 3	substrate-specific transmembrane transporter activity	34	8.95%	0.02412947
Biol Process level 4	polyol metabolic process	4	1.05%	0.02510839
Biol Process level 5	glycerol metabolic process	4	1.05%	0.02638059
Cell Component level 1	envelope	25	6.58%	0.02725718
Cell Component level 4	organelle envelope	25	6.58%	0.02747082
Cell Component level 2	organelle envelope	25	6.58%	0.02790184
Cell Component level 3	organelle envelope	25	6.58%	0.02802884
Mol Function level 4	calcium ion binding	15	3.95%	0.0280402
Cell Component level 5	organelle envelope	25	6.58%	0.02903373
Mol Function level 5	glucuronosyltransferase activity	4	1.05%	0.03232795
Mol Function level 5	P-P-bond-hydrolysis-driven transmembrane transporter activity	13	3.42%	0.03447162
Mol Function level 4	rRNA binding	4	1.05%	0.03590491
Biol Process level 4	female gamete generation	24	6.32%	0.03591493
Mol Function level 5	glutathione peroxidase activity	3	0.79%	0.03662947
Mol Function level 3	oxidoreductase activity, acting on NADH or NADPH	8	2.11%	0.03814346
Biol Process level 5	oogenesis	24	6.32%	0.03852929
Mol Function level 3	glutathione peroxidase activity	3	0.79%	0.03859867
Biol Process level 2	catabolic process	23	6.05%	0.03956529

Mol Function level 2	vitamin binding	5	1.32%	0.04071686
Mol Function level 4	magnesium ion binding	6	1.58%	0.04227459
Cell Component level 4	mitochondrial inner membrane	18	4.74%	0.04233296
Cell Component level 4	organelle inner membrane	18	4.74%	0.04233296
Cell Component level 3	organelle inner membrane	18	4.74%	0.04275836
Biol Process level 4	cellular macromolecule catabolic process	14	3.68%	0.04355369
Cell Component level 5	mitochondrial inner membrane	18	4.74%	0.04419715
Cell Component level 5	organelle inner membrane	18	4.74%	0.04419715
Biol Process level 5	acetyl-CoA metabolic process	6	1.58%	0.04424803
Mol Function level 4	NADH dehydrogenase activity	7	1.84%	0.04526462
Cell Component level 4	cytosolic small ribosomal subunit (sensu Eukaryota)	6	1.58%	0.04540216
Biol Process level 1	reproduction	32	8.42%	0.04546934
Mol Function level 4	primary active transmembrane transporter activity	13	3.42%	0.0454952
Cell Component level 5	cytosolic small ribosomal subunit (sensu Eukaryota)	6	1.58%	0.0463302
Mol Function level 3	ligase activity, forming carbon-sulfur bonds	4	1.05%	0.04666897

Table S13. Significantly enriched GO terms for the 352 differentially expressed genes associated with unique spatiotemporal memories and not with time of day, training group, and/or activity state.

GO Category	GO Term	Count	%	PValue
Biol Process level 3	extracellular structure organization and biogenesis	7	3.12%	0.00441799
Biol Process level 4	regulation of synaptic growth at neuromuscular junction	4	1.79%	0.008722
Biol Process level 3	regulation of synaptic growth at neuromuscular junction	4	1.79%	0.00928487
Biol Process level 4	ovarian nurse cell to oocyte transport	5	2.23%	0.00936606
Biol Process level 4	synapse organization and biogenesis	6	2.68%	0.01007037
Biol Process level 3	ovarian nurse cell to oocyte transport	5	2.23%	0.01013575
Biol Process level 5	synaptogenesis	5	2.23%	0.01318377
Biol Process level 5	oogenesis	15	6.70%	0.0149086
Biol Process level 3	synaptic growth at neuromuscular junction	4	1.79%	0.01513539
Biol Process level 4	female gamete generation	15	6.70%	0.01588337
Mol Function level 4	calcium ion binding	10	4.46%	0.01917808
Mol Function level 4	thiol-disulfide exchange intermediate activity	3	1.34%	0.02505865
Mol Function level 5	pyrophosphatase activity	18	8.04%	0.02707767
Biol Process level 4	female germ-line cyst formation	3	1.34%	0.03061361
Biol Process level 5	female germ-line cyst formation	3	1.34%	0.03085084
Biol Process level 3	gamete generation	17	7.59%	0.0318054
Biol Process level 2	sexual reproduction	17	7.59%	0.03643064
Cell Component level 4	cullin-RING ubiquitin ligase complex	3	1.34%	0.03837186
Mol Function level 5	acetylglucosaminyltransferase activity	4	1.79%	0.03937506
Cell Component level 5	cullin-RING ubiquitin ligase complex	3	1.34%	0.04037742
Cell Component level 5	SCF ubiquitin ligase complex	3	1.34%	0.04037742
Biol Process level 5	neuromuscular junction development	4	1.79%	0.04077406
Mol Function level 3	hydrolase activity, acting on acid anhydrides	18	8.04%	0.04549037
Mol Function level 5	ATPase, coupled to transmembrane movement of substances	7	3.12%	0.04599123
Biol Process level 4	regulation of apoptosis	6	2.68%	0.04823195
Biol Process level 5	regulation of apoptosis	6	2.68%	0.04891282

Table S14. Significantly enriched GO terms for genes found to be more highly expressed in morning-anticipating bees (tAM-cAM), as compared to afternoon-anticipating bees (tPM-cPM), after removal of genes significant for the time of day, training group, and/or activity state.

GO Category	GO Term	Count	%	PValue
Biol Process level 5	oogenesis	13	10.83%	0.00133761
Biol Process level 4	female gamete generation	13	10.83%	0.00136778
Biol Process level 4	ovarian nurse cell to oocyte transport	5	4.17%	0.00146758
Mol Function level 3	active transmembrane transporter activity	12	10.00%	0.00164725
Biol Process level 3	ovarian nurse cell to oocyte transport	5	4.17%	0.00164923
Mol Function level 4	calcium ion binding	9	7.50%	0.00211815
Biol Process level 3	extracellular structure organization and biogenesis	6	5.00%	0.00239965
Mol Function level 5	ATPase, coupled to transmembrane movement of substances	7	5.83%	0.00476689
Biol Process level 3	gamete generation	14	11.67%	0.00495429
Biol Process level 2	sexual reproduction	14	11.67%	0.00523005
Biol Process level 1	reproduction	15	12.50%	0.00540292
Mol Function level 4	hydrolase on acid anhydrides, transmembrane movement	7	5.83%	0.0056696
Biol Process level 4	synapse organization and biogenesis	5	4.17%	0.00803415
Mol Function level 5	pyrophosphatase activity	14	11.67%	0.00844505
Biol Process level 4	female germ-line cyst formation	3	2.50%	0.01157987
Biol Process level 5	female germ-line cyst formation	3	2.50%	0.0118057
Mol Function level 4	hydrolase, acting on phosphorus-containing anhydrides	14	11.67%	0.01222169
Mol Function level 3	hydrolase activity, acting on acid anhydrides	14	11.67%	0.01414431
Mol Function level 5	P-P-bond-hydrolysis-driven transmembrane transporter activity	7	5.83%	0.0146194
Mol Function level 2	transmembrane transporter activity	16	13.33%	0.01507815
Mol Function level 4	primary active transmembrane transporter activity	7	5.83%	0.01595288
Biol Process level 5	synaptogenesis	4	3.33%	0.01824488
Biol Process level 4	anatomical structure formation	7	5.83%	0.02083398
Biol Process level 2	anatomical structure formation	7	5.83%	0.02368547
Biol Process level 3	anatomical structure formation	7	5.83%	0.02395452
Biol Process level 5	ovarian follicle cell development	6	5.00%	0.02546711
Biol Process level 3	ovarian follicle cell development	6	5.00%	0.02766751
Biol Process level 4	regulation of synaptic growth at neuromuscular junction	3	2.50%	0.02846087
Biol Process level 3	regulation of synaptic growth at neuromuscular junction	3	2.50%	0.03012666
Mol Function level 5	ATPase activity, coupled to transmembrane movement of ions	5	4.17%	0.0360755
Biol Process level 4	germ-line cyst formation	3	2.50%	0.03910729
Biol Process level 5	germ-line cyst formation	3	2.50%	0.03983418
Biol Process level 3	germ-line cyst formation	3	2.50%	0.04135366
Biol Process level 3	synaptic growth at neuromuscular junction	3	2.50%	0.04135366
Cell Component level 4	mitochondrial envelope	9	7.50%	0.04315457
Cell Component level 2	membrane	34	28.33%	0.04628274
Cell Component level 3	membrane	34	28.33%	0.04656064
Biol Process level 4	regulation of transforming growth factor beta receptor signaling	2	1.67%	0.04863556
Biol Process level 4	ring canal formation, actin assembly	2	1.67%	0.04863556
Biol Process level 5	ring canal formation, actin assembly	2	1.67%	0.04913065
Biol Process level 5	negative regulation of transforming growth factor beta signaling	2	1.67%	0.04913065
Biol Process level 5	regulation of transforming growth factor beta receptor signaling	2	1.67%	0.04913065
Cell Component level 5	mitochondrial envelope	9	7.50%	0.0495029

Table S15. Significantly enriched GO terms for genes found to be more highly expressed in afternoon-anticipating bees (tPM-cPM), as compared to morning-anticipating bees (tAM-cAM), after removal of genes significant for the time of day, training group, and/or activity state.

GO Category	GO Term	Count	%	PValue
Biol Process level 5	lipid biosynthetic process	6	5.77%	0.00215915
Biol Process level 4	lipid biosynthetic process	6	5.77%	0.00223107
Biol Process level 3	lipid biosynthetic process	6	5.77%	0.00236788
Biol Process level 3	lipid metabolic process	9	8.65%	0.00409178
Biol Process level 4	cellular lipid metabolic process	8	7.69%	0.00443555
Biol Process level 3	cellular lipid metabolic process	8	7.69%	0.00479968
Mol Function level 2	transferase activity	17	16.35%	0.01983536
Mol Function level 3	transferase activity, transferring glycosyl groups	5	4.81%	0.02578568
Biol Process level 5	positive regulation of retinal cell programmed cell death	2	1.92%	0.03167386
Cell Component level 4	Golgi stack	3	2.88%	0.0319922
Mol Function level 5	acetylglucosaminyltransferase activity	3	2.88%	0.03308461
Cell Component level 5	Golgi stack	3	2.88%	0.03366131
Mol Function level 1	catalytic activity	40	38.46%	0.036336
Cell Component level 3	ubiquitin ligase complex	3	2.88%	0.04618184
Cell Component level 4	ubiquitin ligase complex	3	2.88%	0.04966404

Table S16. Results of statistical tests for gene expression differences in canonical clock genes as well as each gene analyzed by both qPCR (N=76) and microarray (N=37). p-values are shown here. Graphical representation of means is found in Figure 5 and supplemental Figure S1. *Cryptochrome* did not have high enough gene expression in the brain to pass filtering thresholds on the microarray. *Tim2* did not have a representing oligo probe on the microarray. “Time of day” contrasts tAM-cAM and tPM-cAM with tAM-cPM and tPM-cPM. “Training group” contrasts tAM-cAM and tAM-cPM with tPM-cAM and tPM-cPM. “Activity state” contrasts tAM-cAM and tPM-cPM with tAM-cPM and tPM-cAM. All three of these contrasts were performed using 2-way ANOVA with post-hoc contrasts. Finally, “Different spatiotemporal memories” contrasts tAM-cAM with tPM-cPM, using t-tests.

Gene	Time of day		Training group		Activity State		Different spatiotemporal memories	
	microarray	qPCR	microarray	qPCR	microarray	qPCR	microarray	qPCR
<i>Period</i>	0.9127	0.0309	0.6018	0.4227	0.0452	<.0001	0.2056	0.0547
<i>Cryptochrome</i>	---	<.0001	---	0.8804	---	<.0001	---	0.0072
<i>Tim2</i>	---	0.9607	---	0.0037	---	0.0768	---	0.0937
<i>Cycle</i>	0.1114	<.0001	0.5467	0.5986	0.0192	0.9890	0.5299	0.0108
<i>Clock</i>	0.7303	0.9994	0.6802	0.0035	0.2688	0.7599	0.2078	0.0866
<i>Ankyrin</i>	0.7511	0.0264	0.3021	0.2977	<.0001	<.0001	0.5714	0.7228
<i>Apolipoprotein D</i>	0.0063	0.0303	0.0741	0.1827	0.0003	0.9943	0.0001	0.4792
<i>Black</i>	<.0001	0.0555	0.6059	0.2461	<.0001	0.4493	<.0001	0.4893
<i>Cadherin74a</i>	<.0001	0.0014	0.6988	0.5921	0.0099	0.8996	<.0001	0.0394
<i>Dopamine receptor 1</i>	0.1873	0.0028	0.1882	0.1323	0.0002	0.0798	0.0012	0.0029
<i>Dopamine receptor 2</i>	0.9202	0.9592	0.8689	0.1104	0.0015	0.6108	0.5975	0.2565
<i>Dopamine receptor 3</i>	0.4663	0.0494	0.7893	0.6632	<.0001	0.4835	0.0865	0.2529
<i>Enolase</i>	<.0001	0.6506	0.0741	0.8111	<.0001	0.8503	<.0001	0.5874
<i>GB15691</i>	<.0001	<.0001	0.4319	0.2549	0.0001	0.9978	<.0001	0.0028
<i>GB16507</i>	0.5407	0.2521	0.6204	0.7415	<.0001	0.0632	0.4589	0.7290
<i>GB16541</i>	0.0156	0.5817	0.0512	0.3385	<.0001	0.0037	<.0001	0.5865
<i>Heat shock protein 8</i>	0.0054	0.2124	0.1739	0.4629	<.0001	0.0080	0.0453	0.5141
<i>Heat shock protein 90a</i>	0.0535	0.0009	0.5682	0.3364	<.0001	0.0112	0.0072	0.0114
<i>Histone H1</i>	0.0435	0.1306	0.4530	0.5899	<.0001	0.0002	0.0007	0.0155
<i>Histone H3</i>	<.0001	0.0263	0.0036	0.0931	0.0162	0.6584	<.0001	0.0089
<i>Insulin-like peptide 1</i>	<.0001	0.2950	<.0001	0.9477	0.0162	0.9519	<.0001	0.4395
<i>Insulin receptor</i>	0.9168	0.2803	0.1844	0.2615	<.0001	0.0045	0.0726	0.7764
<i>Lethal(2) essential for life 21</i>	<.0001	0.0025	0.3814	0.4305	<.0001	0.9256	<.0001	0.0940

<i>Nephrilysin2</i>	<.0001	<.0001	0.2276	0.2056	0.7513	0.3698	<.0001	0.0001
<i>Octopamine receptor 1</i>	0.9985	0.4715	0.9866	0.0220	<.0001	0.2352	0.0087	0.0568
<i>Phosphodiesterase8a</i>	0.7220	0.0851	<.0001	0.2008	0.0024	0.3895	0.0038	0.2039
<i>Zwischenferment</i>	0.8537	0.4891	0.8826	0.0058	0.0751	0.2942	0.8398	0.0269

Table S17. Primer sequences for qPCR.

Gene	Forward sequence	Reverse sequence
<i>Period</i>	TGA AAG GGC CAG CGA ATC	CCT CGC TAA TGT TGG TTA ATT GG
<i>Cryptochrome</i>	TGG TGA CAA ACC TCC GTT AAC TT	GTT CCG GAG GAT CCA TGC T
<i>Tim2</i>	TCC AGA GCA GAG CCA CAG CTA	CAA TGG TAT AGG ATG GTC ACT GAT TT
<i>Cycle</i>	TGT GCC CCA AGG TGT ATC G	CTT CGA CTT TTC GCT TCA TTC TG
<i>Clock</i>	CAA GCG GGC GCA TTT ATT A	TCG TAA ACG GTC GTA TTT TCC A
<i>Ankyrin</i>	GTG ATC GAA AGG TTC GCC AG	TCA GGT TCG CTA CCC CAC C
<i>Apolipoprotein D</i>	AGT GTT CGC CAC GGA TTA CAA	TGA CGA TGA GCA AAT GTC AGC
<i>Black</i>	TCG AAA TTG CAG ATA TTT GCG A	CAA ACC ACC TCC CCA AGC T
<i>Cadherin74a</i>	GCC GTA CAT AAT GCG GAT CA	GCG TCA GAA TCA CGT CCG A
<i>Dopamine receptor 1</i>	ACA GAA TTC CGA GAA GCG TTC A	ATT CGC TAG TCG ACG GTT GAT TT
<i>Dopamine receptor 2</i>	ACA CGG AAT TGG TTC TCC ATC T	TCC CGT AAC CGG CTG TCA
<i>Dopamine receptor 3</i>	GCG CGG AGG GAA ATC TTA T	GGA TTC TTA CTG TGC GCT GTG T
<i>Enolase</i>	CAG ATG CTA TGA AAA TGG GTA CTG A	CCA ACA GAA GTA GCA TCA AGA CCA
<i>GB15691</i>	ATT TGA TCG TGT TCG CCT TCA	CGC TTG CTC GCA CTT ATC G
<i>GB16507</i>	CAC GAC ATC ACG CAG CCT T	CCT TGA TCA CGA ACA CCA CG
<i>GB16541</i>	TTG TGC CAT TCC TCC TGA ATT	CGC ATT AAC GCT GAT CGT CA
<i>Heat shock protein 8</i>	ATC CGT TTG CAA TCC TGT TGT	CAC CTG GAT GGA AGC CTC C
<i>Heat shock protein 90a</i>	TCG AAA CAC AAT GAT GAT GAA CAA	CAG TGA AAG AAC CAC CAG CAG A
<i>Histone H1</i>	CGG ACT TCT GAA ATG GTA AAT GC	AAT TGC TTG GAA AGA CGA TCC TT
<i>Histone H3</i>	TTC ACG CGA AAC GTG TTA CAA	GTT TAA GCA CGC TCG CCA C
<i>Insulin-like peptide 1</i>	GCT CAG GCT GTG CTC GAA AAG T	CGT TGT ATC CAC GAC CCT TGC
<i>Insulin receptor</i>	TTC CGT GTA CCA CGG CAG A	GGT GCA AAG TAC GCG TGA GA
<i>Lethal(2) essential for life</i>	TGT TCT CCG TCC TCA TCG ACT	TTG CTC GGG ATA TAA TCC CAA
<i>Nephrilysin2</i>	AAC CGA CGA TCC GAT TCG A	CGA CAA TCA AGA TAC GCG GAA
<i>Octopamine receptor 1</i>	ACG AAG GCG GCG AAG AC	GCG GCA CCA AGT ACA TTG TG
<i>Phosphodiesterase8a</i>	TGC GCT CAC GAA AGA ATC TTA A	TGT GTC CTC GGT AAT ATT CCG C
<i>Zwischenferment</i>	GGA GAA GCC AGC GTC TTG TC	CCA GCG TCA AAG TCT TTA TGC A