

Table S1. Honey bee protein-coding genes described to be involved in behavioral maturation. Their predicted or validated 3' untranslated region (UTR) were recovered from NCBI-GenBank and used for microRNA target prediction.

Gene (symbol)	BeeBase number*	GenBank accession number	Source
vitellogenin (Vg)	GB13999	NM_001011578.1	Nelson et al., 2007; Marco Antonio et al., 2008; Ihle et al., 2010; Wang et al., 2010; Brito et al., 2010; Tsuruda et al., 2008; Fischer et al., 2008; Amdam et al., 2007; Amdam et al., 2006
phosphoinositide-dependent kinase-1 (PDK1)	GB15780	XM_394208.4	Wang et al., 2009, Wang et al., 2011; Brito et al., 2010
hormone receptor-like in 46 (HR46)	GB10650	XM_392128.4	Wang et al., 2009, 2010, 2011
fushi tarazu - transcription factor (ftz-f1)	GB16873	XM_001122182.2	Wang et al., 2011
tyrosinase receptor (TYR)	GB17991	NM_001011594.1	Wang et al., 2011
major royal jelly protein 1 (MRJP1)	GB14888	NM_001011579.1	Wang et al., 2011; Jianke et al., 2010
juvenile hormone inducible protein 26 (Jhi-26)	GB19754	XM_003249349.1	Wang et al., 2011
period circadian protein (Per)	GB19264	NM_001011596.1	Cheeseman et al., 2012; Naeger et al., 2011; Block et al., 2001
cryptochrome 2 (Cry2)	GB10211	NM_001083630.1	Cheeseman et al., 2012; Naeger et al., 2011; Toma et al., 2000
ultraspiracle (usp)	GB16648	NM_001011634.2	Ament et al., 2012; Velarde et al., 2006
futch	GB11509	XM_001121015.2	Kaneko et al., 2010
serine/threonine-protein kinase TAO1 (Tao-1)	GB10074	XM_396577.4	Kaneko et al., 2010
misexpression suppressor of KSR 2 (MESK2)	GB18470	XM_396456.4	Kaneko et al., 2010
phosphatase and tensin homolog (PTEN)	GB14441	NM_001162513.1	Mutti et al., 2011
inositol-3-phosphate synthase (Inos)	GB11572	XM_623374.3	Lutz et al., 2012
JNK interacting protein (jip)	GB14151	XM_392444.4	Lutz et al., 2012
GB13145	GB13145	XM_392140.3	Lutz et al., 2012
GB30322	GB30322	XM_397038.4	Lutz et al., 2012
insulin-like peptide 1 (ilp1)	GB17332	no info	Nilsen et al., 2011; Ament et al., 2008
insulin-like peptide 2 (ilp2)	GB10174	NM_001177903.1	Nilsen et al., 2011; Ament et al., 2008
major royal jelly protein 2 (MRJP2)	GB16246	NM_001011580.1	Jianke et al., 2010
major royal jelly protein 3 (MRJP3)	GB16459	NM_001011601.1	Jianke et al., 2010

insulin receptor substrate (IRS or Chico)	GB11037	XM_391985.3	Wang et al., 2010; Brito et al., 2010
cGMP-dependent protein kinase foraging (For)	GB18394	NM_001011581.1	Heylen et al., 2009; Fussnecker et al., 2011; Brito et al., 2010; Ben-Shahar et al., 2005; Ben-Shahar et al., 2002
thioredoxin domain-containing protein 9-like	GB16919	XM_624084.2	Calabria et al., 2008
catalase (Cat)	GB11648	NM_001178069.1	Williams et al., 2008
hsp70-binding protein 1-like (Hsp70)	GB15809	XM_393027.4	Williams et al., 2008; Elekonich, 2009; Roberts and Elekonich, 2005
krüppel homolog 1 (Kr-h1)	GB14867	NM_001242470.1	Grozinger et al., 2007; Fussnecker et al., 2008; Grozinger et al., 2007; Grozinger et al., 2003
juvenile hormone epoxide hydrolase (JHEH)	GB10771	XM_394922.4	Mackert et al., 2010
insulin receptor 1 (INR1)	GB15492	XM_394771.4	Ament et al., 2008
insulin receptor 2 (INR2)	GB18331	NM_001246667.1	Ament et al., 2008
a/b-hydrolases 1 or carboxylesterase-6-like	GB11403	XM_391943.4	Castillo, et al., 2012
a/b-hydrolases 2 or triacylglycerol lipase-like	GB13365	XM_001122903.2	Castillo, et al., 2012
dopamine receptor, D1 (DopR1)	GB30031	NM_001011595.1	Liang et al., 2012
dopamine receptor, D2 (DopR2)	GB17921	NM_001011567.1	Liang et al., 2012
GABA neurotransmitter transporter-1B (Gat-1B)	GB16752	NM_001011643.1	Liang et al., 2012
GABA neurotransmitter transporter-1A (Gat-a)	GB19372	NM_001134934.1	Liang et al., 2012
glutamate decarboxylase 1 (Gad1)	GB15745	XM_392052.4	Liang et al., 2012
cysteine sulfinic acid decarboxylase-like (Black)	GB19363	XM_392588.4	Liang et al., 2012
vesicular glutamate transporter 3-like (Vglut)	GB19507	XM_394228.4	Liang et al., 2012
excitatory amino acid transporter 2 (Eaat-2)	GB16377	NM_001011597.1	Liang et al., 2012; Lobo et al., 2003
ionotropic glutamate receptor (Glu-R1)	GB11443	XR_120226.1	Liang et al., 2012
octopamine receptor (OctR1)	GB11266	NM_001011565.1	Liang et al., 2012
cycle	GB11309	XM_001121441.2	Naeger et al., 2011
clock	GB17107	XM_394233.4	Naeger et al., 2011
timeout (Tim2)	GB13318	XM_003250605.1	Naeger et al., 2011
A disintegrin and metalloproteinase with thrombospondin motifs 3-like (ADAM)	GB18514	XM_396342.4	Brito et al., 2010
CG5059	GB17541	XM_393165.4	Brito et al., 2010
take-out-like carrier protein or juvenile hormone binding protein (JHBP-1)	GB19811	NM_001011640.1	Brito et al., 2010

mapmodulin (Map)	GB14785	XM_396725.4	Brito et al., 2010
midway (Mid or mdy)	GB13792	XM_624751.3	Brito et al., 2010
myosin regulatory light chain 2 (Mlc2)	GB13399	XM_393371.4	Brito et al., 2010
Niemann-Pick Type C-2 homolog (NPC2-like)	GB14261	XM_001120220.2	Brito et al., 2010
fatty acyl-CoA reductase 1-like (OAC001)	GB17376	XM_001120449.2	Brito et al., 2010
phosphoinositide 3-kinase 68D (PI3K)	GB17429	XM_396869.4	Brito et al., 2010
phosphatidylinositol-4-phosphate-5-kinase (PIP5K)	GB13779	XM_001120893.2	Brito et al., 2010
profilin (PRF)	GB13380	NM_001011626.2	Brito et al., 2010
phospholipase A2-like (sPLA2-like)	GB19761	XM_001120293.2	Brito et al., 2010
secreted protein, acidic, and rich in cysteines (SPARC)	GB11432	XM_623076.3	Brito et al., 2010
transferrin (Trf)	GB19745	NM_001011572.1	Brito et al., 2010
ubiquitin-specific protease 7 (Ubq)	GB17081	XM_003250042.1	Brito et al., 2010
heat shock protein Hsp70Ab-like (Hsp-70-7)	GB19503	NM_001160072.1	Elekonich, 2009
juvenile hormone esterase (JHE)	GB15327	NM_001011563.1	Mackert et al., 2008
malvolio (Mvl)	GB15139	XM_623943.3	Ben-Shahar et al., 2004
histone demethylase or lysine-specific demethylase 6A-like (Utx)	GB12434	XM_396315.4	Grozinger et al., 2003
seven-up (svp)	GB17100	XM_392402.3	Velarde et al., 2006
tyramine beta-hydroxylase (Tbh)	GB16337	NM_001077824.1	Lehman et al., 2006
acetylcholinesterase (AChE-2)	GB14873	NM_001040230.1	Shapira et al., 2001

*Based on Official Gene Set *amel_OGSv1.1* (previously known as "PreRelease 2") available at http://hymenopteragenome.org/beebase/?q=download_sequences

Table S2. Sequences of the most relevant honey bee mature microRNAs found in this study and used for target prediction analysis. Sequences were recovered from miRBase, release 17 (<http://www.mirbase.org>).

microRNA name	microRNA mature sequence (5' - 3')
ame-let-7 MIMAT0004418	UGAGGUAGUAGGUUGUAUAGU
ame-miR-1 MIMAT0001471	UGGAAUGUAAAGAAGUAUGGAG
ame-miR-133 MIMAT0001475	UUGGUCCCCUUCAACCAGCUGU
ame-miR-252 MIMAT0010113	AUAAGUACUAGUGCCGCAGGAG
ame-miR-281 MIMAT0001483	UGUCAUGGAGUUGCUCUCUUUGU
ame-miR-3049 MIMAT0018528	UCCGUCCAACUCCUUUCCGUCU
ame-miR-316 MIMAT0010122	UGUCUUUUUCCGCUUUGCUGCCG
ame-miR-31a MIMAT0004428	GGCAAGAUGUCGGCAUAGCUGA
ame-miR-3718a MIMAT0018520	UCCCCUGUCCUGUCCCGAUAG
ame-miR-3739 MIMAT0018608	UUGGGAGGGGGAGAGAGCAGCU
ame-miR-3745 MIMAT0018513	CGGGUGCCACCCCCGGCCCGG
ame-miR-3749 MIMAT0018518	UGGAAUGGCCCUUUCACCUUCCC
ame-miR-375 MIMAT0004431	UUUGUUCGUUCGGCUCGAGUUA
ame-miR-3776 MIMAT0018553	AGGAGGGGGGGAGAGAGAAGCG
ame-miR-3796 MIMAT0018581	GAUCCUAAGGGGAGGAGAGGAUUU
ame-miR-750 MIMAT0018615	CCAGAUCUAACUCUCCAGCUC
ame-miR-92a MIMAT0004435	AUUGCACUUGUCCCGGCCUAU
ame-miR-989 MIMAT0018511	CGUGAUGUGACGUAGUGGUUCU

Table S3. List of 72 honey bee microRNAs undetected in this study (based on information available in miRBase release 17).

ame-miR-1006	ame-miR-3734	ame-miR-3761	ame-miR-3781
ame-miR-219	ame-miR-3737	ame-miR-3762	ame-miR-3782
ame-miR-315	ame-miR-3738	ame-miR-3763	ame-miR-3784
ame-miR-318	ame-miR-3740	ame-miR-3764	ame-miR-3787
ame-miR-33	ame-miR-3742	ame-miR-3765	ame-miR-3790
ame-miR-3715	ame-miR-3744	ame-miR-3766	ame-miR-3792
ame-miR-3716a	ame-miR-3746	ame-miR-3767	ame-miR-3794
ame-miR-3716b	ame-miR-3747a	ame-miR-3768	ame-miR-3795
ame-miR-3717	ame-miR-3748	ame-miR-3769	ame-miR-3797
ame-miR-3720	ame-miR-3750	ame-miR-3770	ame-miR-3798
ame-miR-3721	ame-miR-3752	ame-miR-3771	ame-miR-3799
ame-miR-3722	ame-miR-3753	ame-miR-3772	ame-miR-3800
ame-miR-3723	ame-miR-3754	ame-miR-3774	ame-miR-3801
ame-miR-3724	ame-miR-3755	ame-miR-3775	ame-miR-928
ame-miR-3725	ame-miR-3757	ame-miR-3777	ame-miR-965
ame-miR-3728	ame-miR-3758	ame-miR-3778	ame-miR-980
ame-miR-3729	ame-miR-3759	ame-miR-3779	ame-miR-985
ame-miR-3731	ame-miR-3760	ame-miR-3780	ame-miR-9b

Table S4. Top 10 housekeeper microRNA candidates in brain and fat body tissues. By means of T test (see p-value) and Log2 ratio, expression level (Mean±SD) of each microRNA is similar between compared groups of the same tissue. However, although expression levels of the highlighted microRNAs (with black background) are similar between both tissues, they are differentially expressed according to an ANOVA comparison considering $p < 0.05$. The only exception is ame-miR-263, the expression of which is similar when all 4 groups were compared (ANOVA, $p > 0.09$).

	microRNA	GFB _r (A)		VF _r (B)		p-value (A vs. B)	Log2 (B/A)
		Mean	SD(±)	Mean	SD(±)		
BRAIN	ame-miR-307	2,570	658	2,573	735	>0.9	0.00
	ame-miR-981	615	139	650	128	>0.6	0.08
	ame-miR-276	15,041	3,154	15,982	2,167	>0.4	0.09
	ame-miR-317	13,069	2,086	14,047	1,236	>0.3	0.10
	ame-miR-277	6,042	582	5,654	857	>0.3	-0.10
	ame-miR-2	5,749	747	6,314	805	>0.2	0.14
	ame-miR-184	21,038	3,199	18,716	1,392	>0.1	-0.17
	ame-miR-7	3,416	1,490	3,042	1,686	>0.4	-0.17
	ame-miR-932	1,086	218	959	319	>0.4	-0.18
	ame-miR-263	553	118	627	320	>0.7	0.18
FAT BODY		GFF _b (A)		VFF _b (B)		p-value (A vs. B)	Log2 (B/A)
		Mean	SD(±)	Mean	SD(±)		
	ame-miR-317	8,859	846	8,880	1,493	>0.9	0.00
	ame-miR-307	10,916	1,254	10,974	2,404	>0.9	0.01
	ame-miR-8	39,176	4,613	39,658	3,543	>0.8	0.02
	ame-miR-252	1,384	234	1,360	153	>0.9	-0.03
	ame-miR-276	27,282	6,829	28,091	4,561	>0.7	0.04
	ame-miR-263	546	113	528	47	>0.8	-0.05
	ame-miR-11	1,876	743	1,936	408	>0.6	0.05
	ame-miR-87	5,148	955	4,912	571	>0.7	-0.07
ame-miR-277	7,932	1,228	7,522	1,991	>0.5	-0.08	
ame-miR-13b	2,937	670	3,156	361	>0.4	0.10	