Table S2. BLASTP analysis of the uncharacterized proteins identified in non-diapausing (S2ND and S4ND), diapausing (S2D) and post-diapausing (S4PD) eggs of *Mahanarva spectabilis*. BLASTP was performed against sequences from "Insecta (taxid:50557)". The results listed here are the first sequences that were not a predicted, hypothetical, putative, low quality or uncharacterized protein. The descriptions with E-value >1E-03 (in blue letters) were not considered which means the proteins highlighted in light red remained as uncharacterized.

Egg	Code	Peptide sequence	Description	Number of peptides	E-value	Accession
S2ND	A0A1B6DHB6	IFAPQHDLEVQYDGTGVK	Vitellogenin	*Nephotettix virescens* (hemiptera)	9E-04	AOY34570.1
		YIIQSSVTTNK	Vitellogenin-1-like isoform X2	*Zootermopsis nevadensis* (dictyoptera)	0.022	XP_021939371.1
	A0A1B6L0Y6	DAVAQAGTGPALLTIK	Vitellogenin	*Nephotettix virescens* (hemiptera)	2E-07	AOY34570.1
		NLQVNIPIR	Vitellogenin	*Cephus cinctus* (hymenoptera)	1.4	XP_015600461.1
	A0A1B6CLY7	ALGNIAHPR	Vitellogenin-like	*Fopius arisanus* (hymenoptera)	1.9	XP_011305694.1
	A0A1B6D741	IYTNC(+57.02)C(+57.02)PQSTDR	Heterogeneous nuclear ribonucleoprotein K isoform X1	*Frankliniella occidentalis* (thysanoptera)	7E-06	XP_026287837.1
	A0A1B6EGC2	IIGWGEENGVK	Cathepsin B-like cysteine proteinase 4	*Bemisia tabaci* (hemiptera)	0.003	XP_018914549.1
	A0A182UHL8	ASHAAC(+57.02)R	Endoribonuclease Dcr-1-like	*Galleria mellonella* (lepidoptera)	235	XP_026754824.1
	A0A026WAJ5	NAVAQAGTGPALLTIK	Vitellogenin	*Nephotettix virescens* (hemiptera)	2E-06	AOY34570.1
	A0A1B6EBA7	KIVSALSKLSK	UDP-glucuronosyltransferase 2B1-like isoform X1	*Trichoplusia ni* (lepidoptera)	24	XP_026732558.1
S4ND	A0A1B6DDC2	ALDSIQASLEAESK	Myosin heavy chain, muscle	*Trachymyrmex zeteki* (hymenoptera)	0.002	KYQ60220.1
		KLEADINELEIALDHANK	Myosin heavy chain, muscle	*Operophtera brumata* (lepidoptera)	8E-11	KOB77375.1
		DVQTALEEEQR	Myosin heavy chain, muscle isoform X11	*Cimex lectularius*(hemiptera)	0.001	XP_024080474.1
		SQLELSQVR	Myosin heavy chain, muscle isoform X13	*Asbolus verrucosus*(coleoptera)	0.34	RZB40752.1
		QIEEAEEIAALNLAK	Myosin heavy chain, muscle isoform X11	*Cimex lectularius* (hemiptera)	3E-07	XP_024080474.1
		NLADEVKDLLDQIGEGGR	Myosin heavy chain, muscle isoform X2	*Trichogramma pretiosum* (hymenoptera)	2E-10	XP_014231478.1
		DELQAALEEAEAALEQEENK	Myosin heavy chain, muscle	*Operophtera brumata* (Lepidoptera)	2E-12	KOB77375.1
		ANALQNELEESR	Myosin heavy chain, muscle isoform X3	*Trichogramma pretiosum* (hymenoptera)	2E-04	XP_014231479.1
	A0A1B6EBM7	YIIQSSVTTNK	Vitellogenin-1-like isoform X2	*Zootermopsis nevadensis* (dictyoptera)	0.022	XP_021939371.1
		IFAPQHDLEVQYDGTGVK	Vitellogenin	*Nephotettix virescens* (hemiptera)	9E-04	AOY34570.1
	A0A1B6L0Y6	DAVAQAGTGPALLTIK	Vitellogenin	*Nephotettix virescens* (hemiptera)	2E-07	AOY34570.1
		NLQVNIPIR	Vitellogenin	*Cephus cinctus* (hymenoptera)	1.4	XP_015600461.1
	J9JRM2	AAVTGLGFLLFR	26S proteasome non-ATPase regulatory subunit 1	*Solenopsis invicta* (hymenoptera)	6E-04	XP_011165032.1
	A0A1B6E1L5	YSTETDEVYK	Obscurin isoform X1	*Cimex lectularius*(hemiptera)	6.8	XP_014257917.1
	A0A1B6C1N7	ALGNIAHPR	Vitellogenin-1-like	*Frankliniella occidentalis* (thysanoptera)	3.9	XP_026275424.1
	K7IRP4	VLEQLTGQQPVFSK	Ribosomal protein L11	*Helicoverpa armigera* (lepidoptera)	2E-06	ABK29482.1
	A0A1B6MMG8	ILLELYYK	NADH dehydrogenase subunit 5 (mitochondrion)	*Appendiseta robiniae* (hemiptera)	36	YP_009628324.1
	X1XR84	TPPGGE	Titin	*Scaptodrosophila lebanonensis* (diptera)	367	XP_030372157.1
S2D	A0A1B6E1L0	LGQEFDEETPDGR	Fatty acid-binding protein	*Blattella germanica* (dictyoptera)	6E-06	PSN51340.1
		MILTVDDIVC(+57.02)TR	Fatty acid-binding protein, muscle isoform X1	*Frankliniella occidentalis* (thysanoptera)	1E-04	XP_026271769.1
		AIGVGFFTR	Fatty acid-binding protein, liver	*Copidosoma floridanum* (hymenoptera)	11	XP_014206520.1
	A0A1B6EBM7	IFAPQHDLEVQYDGTGVK	Vitellogenin	*Nephotettix virescens* (hemiptera)	9E-04	AOY34570.1
		YIIQSSVTTNK	Vitellogenin-1-like isoform X2	*Zootermopsis nevadensis* (dictyoptera)	0.022	XP_021939371.1
	A0A1B6L0Y6	DAVAQAGTGPALLTIK	Vitellogenin	*Nephotettix virescens* (hemiptera)	2E-07	AOY34570.1
	A0A1B6CLY7	TNPSMQLLQR	Dynein heavy chain 10, axonemal	*Solenopsis invicta* (hymenoptera)	9.7	XP_025993248.1
		ALGNIAHPR	Vitellogenin-1-like	*Frankliniella occidentalis* (thysanoptera)	3.9	XP_026275424.1
		TNPSM(+15.99)QLLQR	Dynein heavy chain 10, axonemal	*Solenopsis invicta* (hymenoptera)	9.7	XP_025993248.1
	A0A1B6DMG8	AGGEIITFDELALR	60S ribosomal protein L18	*Copidosoma floridanum* (hymenoptera)	3E-05	XP_014203708.1
	A0A182L4P4	GSGGGGGGGGPNRR	Glycine-rich selenoprotein	*Zeugodacus cucurbitae* (diptera)	0.014	XP_011179040.1
	A0A182HNE4	DSYVGDEAQSK	Histone acetyltransferase KAT2A	*Melipona quadrifasciata* (hymenoptera)	0.003	KOX67158.1
	A0A182MEX8	YWIAVNSWGK	Tubulointerstitial nephritis antigen	*Anopheles darlingi* (diptera)	0.007	ETN66269.1
	A0A1B0EM04	LLLEVIDR	Transcription initiation factor TFIID subunit 1 isoform X1	*Drosophila erecta* (diptera)	13	XP_001979100.1
	A0A182LXE1	HAAGDK	Synaptotagmin-like protein 5	*Camponotus floridanus* (hymenoptera)	521	EFN64320.1
S4PD	A0A1B6DDC2	AQQELEEAEER	Myosin heavy chain, muscle isoform X8	*Cimex lectularius* (hemiptera)	0.001	XP_024080472.1
		ALDSIQASLEAESK	Myosin heavy chain, muscle	*Trachymyrmex zeteki* (hymenoptera)	0.002	KYQ60220.1
		GAYEEGQEQLEAVR	Myosin heavy chain, muscle	*Trachymyrmex zeteki* (hymenoptera)	1E-06	KYQ60220.1
		NLADEVKDLLDQIGEGGR	Myosin heavy chain, muscle isoform X5	*Cimex lectularius (hemiptera)*	2E-10	XP_014245692.1
		KLEGELQTLHADLDELLNEAK	Myosin heavy chain, muscle isoform X11	*Cimex lectularius* (hemiptera)	1E-13	XP_024080474.1

Table S2. Continued.

Egg	Code	Peptide sequence	Description	Number of peptides	E-value	Accession
S4PD	A0A1B6DHB6	YIIQSSVTTNK	Vitellogenin-1-like isoform X2	*Zootermopsis nevadensis* (dictyoptera)	0.022	XP_021939371.1
		IFAPQHDLEVQYDGTGVK	Vitellogenin	*Nephotettix virescens* (hemiptera)	9E-04	AOY34570.1
	A0A1B6CLY7	ALGNIAHPR	Vitellogenin-1-like	*Frankliniella occidentalis* (thysanoptera)	3.9	XP_026275424.1
	A0A1B6L0Y6	DAVAQAGTGPALLTIK	Vitellogenin	*Nephotettix virescens* (hemiptera)	2E-07	AOY34570.1
		NLQVNIPIR	Vitellogenin	*Cephus cinctus* (hymenoptera)	1.4	XP_015600461.1
	A0A1B6EFU4	TNDIAGDGTTTATVLAQAIVR	Heat shock protein 65	*Myzus persicae* (hemiptera)	2E-09	ACA23885.1
	A0A1B6CC82	YFTILEAGSR	Apolipoprotein D	*Halyomorpha halys* (hemiptera)	0.11	XP_014281887.1
	A0A1B6CGM1	LWLVDGAPDFLK	Fatty acid synthase	*Rhopalosiphum maidis* (hemiptera)	0.11	XP_026814487.1
	K7JMJ3	SNPTVSYYFLK	NADH dehydrogenase subunit 1 (mitochondrion)	*Luciola cruciata* (coleoptera)	6.0	BAL14643.1
	A0A1B6EGC2	IIGWGEENGVK	Cysteine peptidase, cysteine active site, peptidase C1A	*Cinara cedri* (hemiptera)	0.011	VVC45869.1