

**Supplementary Table 1. Individual peptides with observed modifications and their associated neuropeptides.**

Neuropeptide gene	Peptide	Possible modifications observed	Test of difference in neuropeptide abundances
<i>Apis</i> -ITG-like (ITG)	AGEKRLTGLAAFKRPMH ALLAICLLGRQTEAWGGL ANMGYG LTGLAAFKRPM TCLFAYGRRVGELCRRDSDCESGLVC VCTESEQTSSSRICR	N terminus acetylation; Oxidation; C terminus amidation N terminus acetylation N terminus acetylation Oxidation C terminus amidation	$F_{2,9} = 2.826, P = 0.11$
<i>Apis</i> -NVP-like (NVP)	APVNAESHGESRPT APVNAESHGESRPTA APVNAESHGESRPTAV FAALALALPASVVEDVKSSDIKNSKVKRAP FLNGPTRNNYYTLSELLGAAQQEQNVPLYQRYVL LPASVVEDVKSSD LPASVVEDVKSSDIKN LPASVVEDVKSSDIKNS LPASVVEDVKSSDIKNSKV LPASVVEDVKSSDIKNSKVKRAPVN NAQKTRMDNRYKREVD  PLYTSEDE PTRNNYYTLSELLGAAQQEQNVPLYQRYVL SNDPTREI SPLYTSEDELGNDKT	C terminus amidation C terminus amidation C terminus amidation C terminus amidation  C terminus amidation C terminus amidation C terminus amidation N terminus acetylation; C terminus amidation N terminus acetylation  N terminus acetylation; C terminus amidation	$F_{2,9} = 4.210, P = 0.05$
Crustean cardioactive peptide (CCAP)	ANGYEGRDSIIDPK FAFLVIDTESIFLPKRANGYE FAFLVIDTESIFLPKRANGYEGRDSIIDP SMQGDND	C terminus amidation C terminus amidation Oxidation	$F_{2,9} = 5.380, P = 0.029$
Diuretic hormone 31 (DH <sub>31</sub> )	APHNSRYMGYYGSNQDGGQNPYLLQTLARIRQAIIEEDLENS GLDLGLGRGFSGSQAA GLDLGLGRGFSGSQAAKH GLDLGLGRGFSGSQAAKHLM GLDLGLGRGFSGSQAAKHLMGLAAANFAGGP  GLDLGLGRGFSGSQAAKHLMGLAAANFAGGP LDLGLGRGFSGSQAAKHLMGLAAANFAGGP	C terminus amidation Oxidation; C terminus amidation C terminus amidation N terminus acetylation; Oxidation; C terminus amidation	$F_{2,9} = 1.799, P = 0.22$
Diuretic hormone 47 (DH <sub>47</sub> )	EENPLFGRENEPMDREAMGYILPKLMPRY	C terminus amidation	$F_{2,9} = 2.543, P = 0.13$
FMRFamide (FMRFa)	DKGHFLRF GDLPANYLEMEEGYDRPT GNSDFLRF NDNFMRF PERNSNFLRF STLYKNFARL VLGDKSQFIRF	C terminus amidation C terminus amidation C terminus amidation C terminus amidation C terminus amidation C terminus amidation C terminus amidation	$F_{2,9} = 13.002, P = 0.0022$
IDL-like (IDL)	AMAPHPLLVSV IDLSRLYGHL IDLSRLYGHL IDLSRLYGHLSS IPHAVMAIDLRLYGH IPHAVMAIDLRLYGHLS IPHAVMAIDLRLYGHLS ISIQYLCDGAPDCSDGYDEDSRLCTAAKR LKPLGGVDKVAIALSESQTIED	C terminus amidation  C terminus amidation C terminus amidation  N terminus acetylation N terminus acetylation	$F_{2,9} = 0.890, P = 0.44$
Ion transport peptide (ITP)	SPAQRMSPLLSHLS		
Myosuppressin (MYO)	AVAFIFVAMMASSNLSMASNLPLIYC DGLQKRQLCFALLERMDAPQEVSNQVMDNQLYERGI FVAMMASSNLSMASNL FVAMMASSNLSMASNLPLI  LTVEDLVLMNQCTVYAVAFIFVAMMASSNLSMAS QDVVDHVFLRF RQLCFALLERMDAPQEVSNQV VLVMNQCTVYAVAFI	Oxidation  Oxidation N terminus acetylation; Oxidation; C terminus amidation N terminus acetylation; Oxidation N terminus Pyroglutamination; C terminus amidation N terminus acetylation; Oxidation N terminus acetylation	$F_{2,9} = 3.611, P = 0.071$
Myoinhibiting peptide (MIP)	AAIDVGSDPDIGIPKESDEMQM AAIDVGSDPDIGIPKESDEMQME DPAWTLNKGIV PEDEYAMKQLAT SAVLVIVGAVICISMLPFSM  SEWGNFRGSW VIVGAVICISMLPFSMQAAIDVGSDPDIGIPKE	Oxidation; C terminus amidation C terminus amidation C terminus amidation N terminus acetylation Oxidation; C terminus amidation C terminus amidation N terminus acetylation	$F_{2,9} = 1.652, P = 0.25$
Natalisin (NTL)	CLGHCKFGGCVKRAARQDDMG		$F_{2,9} = 6.866, P = 0.016$

Neuropeptide gene	Peptide	Possible modifications observed	Test of difference in neuropeptide abundances									
Neuropeptide-like 1 (NPLP-1)	DEPEEIDPFFTAR YIVLDESFFMAAR	N terminus acetylation; Oxidation; C terminus amidation C terminus amidation C terminus amidation	$F_{2,9} = 8.615, P = 0.0081$									
	AGCLLLEAYGDSIAPE AGYIRTLPEEDN ANLAKNGQLPNYQND ERDSGN FLLOPAVDRILLQRLVLMQPR FLLOPAVDRILLQRLVLMQPRN FLLOPAVDRILLQRLVLMQPRNH GIESLARNGEL GIESLARNGELH GIESLARNGELHN GIESLARNGELHNKREIEDLI GIESLARNGELHNKREIEDLIDELY GIESLARNGELHNKREIEDLIDELYE GKRSIANLAKNGQLPNYQND HGPNDRSYDDMMKSDAERDSGNG KESYDDYYRMAAF LLLRASPAESIRGTSALWPDASAGCLLLE	C terminus amidation  Oxidation  C terminus amidation C terminus amidation C terminus amidation  N terminus acetylation C terminus amidation N terminus acetylation; C terminus amidation C terminus amidation C terminus amidation C terminus amidation  C terminus amidation C terminus amidation N terminus acetylation; C terminus amidation										
	NIANLARSYSFPY NLAALARAGYIRTLPEEDN NLAALARAGYIRTLPEEDNG NLAALARAGYIRTLPEEDNGKRSIANLAK NLASIKAGYKQPF NVAALLRQDKIHGPNDRSYDDMMKSDAERDSGNGD NVAASLARGGNLLY NVAASLARGGNLLYGKRNVAALLRQD	C terminus amidation C terminus amidation N terminus acetylation; C terminus amidation										
	SIANLAKNGQLPNYQND SIANLAKNGQLPNYQND SIANLAKNGQLPNYQND VDEMNNKESYDDYYRMAAF	C terminus amidation C terminus amidation N terminus acetylation; C terminus amidation										
	YDDMMKSDAERDSGNGD YIGSLARSSELNRF YIGSLARSSELNRFHND	N terminus acetylation C terminus amidation										
	Pheromone biosynthesis activating neuropeptide (PBAN)	AQLENYDKAITIYQDVAMSSLESSLLKYSAKE HNKMNFTPL KMSALVFGPRL NPSSDELLKNTNLDREQLVALLEMLQESPWAVVALNE TMAAKHHQSIAMYES		C terminus amidation C terminus amidation C terminus amidation N terminus acetylation; Oxidation; C terminus amidation	$F_{2,9} = 5.377, P = 0.029$							
		RYamide (RYa)		ADKAAKTAGKHVIVAPR ADKAAKTAGKHVIVAPRNDKFFLASRY ALNRSQYN ANDRPFMMGMRY ASRYGKRSGGEMISNAAQAALVFPVPP DAMKPSSELQDHLRCHP		C terminus amidation  C terminus amidation Oxidation N terminus acetylation; Oxidation; C terminus amidation Oxidation; C terminus amidation						
				GGAAHQAVQLITRGMANSDDTESEDGIRRCW		C terminus amidation Oxidation; C terminus amidation						
				LNAVLEFYIGTVEA MKPSEL MMTDAMSESKKCRQY		C terminus amidation C terminus amidation N terminus acetylation; Oxidation						
				NDKFFLASRY		C terminus amidation						
				Tachykinin (TK)		APNGFFGMR	Oxidation; C terminus amidation	$F_{2,9} = 5.882, P = 0.023$				
						DLETVLLPEES ESKRAPNGFFGMR PSGFTGVRGKKSFEDEDFEMR	C terminus amidation N terminus acetylation; Oxidation C terminus amidation					
						PSRSAGFFGMR SFEDEDFEMRDIED YPYEFRGKFGV YPYEFRGKFGVGR	C terminus amidation					
						Short neuropeptide F (sNPF)	LRFRRSDPSLIQASPYMLSAQAQDAE SDPSLIQASPYMLSAQAQDAEIAN		C terminus amidation	$F_{2,9} = 2.074, P = 0.18$		
							SIFamide (SIFa)		SAMCEI		N terminus acetylation; Oxidation; C terminus Amidation C terminus amidation	$F_{2,9} = 0.297, P = 0.75$
TYRKPPFNGSIF			C terminus amidation									
Sulfakinin (SK)			EDFDDYGHLY GPAGASVPTANRRI MKLLLVAMCLILMACNDGASAGPAGASVPTANRRIRS QNSDDYGHLYR						C terminus amidation  Oxidation N terminus Pyroglutamination; C terminus Amidation Oxidation		$F_{2,9} = 8.756, P = 0.0077$	
			QTYFMMKLLLVAMCLILMACNDGASAGPAGASVPTANRRIRS						Oxidation			

All presented are the results of ANOVA for differences in the abundance of that neuropeptide in different behavioural states.