

**Table S1. Accession No**

<b>Family</b>	<b>Species</b>	<b>Gene Bank IDs</b>
<b>Vespidae</b>	<i>Vespa mandarinia</i>	XP_035737952.1
	<i>Vespa crabro</i>	XP_046824901.1
	<i>Vespa velutina</i>	XP_047357593.1
	<i>Vespula vulgaris</i>	XP_050858048.1
	<i>Vespula pensylvanica</i>	XP_043673380.1
	<i>Polistes dominula</i>	XP_015177827.1
	<i>Polistes fuscatus</i>	XP_043495209.1
<b>Apidae</b>	<i>Bombus vancouverensis</i> <i>nearcticus</i>	XP_033205116.1
	subgenus <i>Bombus huntii</i>	XP_050473413.1
	<i>Bombus impatiens</i>	XP_003491527.1
	<i>Bombus terrestris</i>	XP_003394698.1
	<i>Bombus ignitus</i>	8EW5_A Chain A
	<i>Apis dorsata</i>	XP_006618153.1
	<i>Apis florea</i>	XP_003696584.1
	<i>Apis laboriosa</i>	XP_043792750.1
	<i>Apis mellifera caucasica</i>	KAG6799352.1
	<i>Apis cerana</i>	XP_016912210.1
	<i>Megachile rotundata</i>	XP_003706340.1
	<i>Melipona quadrifasciata</i>	KOX67587.1

	<i>Frieseomel ittavaria</i>	XP_043521843.1
	<i>Habropoda laboriosa</i>	XP_017790128.1
	<i>Colletes gigas</i>	XP_043257386.1
	<i>Osmia lignaria</i>	XP_034180962.1
	<i>Ceratina calcarata</i>	XP_017884125.1
<b>Formicidae</b>	<i>Camponotus floridanus</i>	XP_011267943.1
	<i>Monomorium pharaonis</i>	XP_012533138.1
	<i>Pogonomyrmex barbatus</i>	XP_011629524.1
	<i>Dinoponera quadriceps</i>	XP_014479977.1
	<i>Harpegnathos saltator</i>	XP_011154535.1
	<i>Odontomachus brunneus</i>	XP_032685464.1
	<i>Acromyrmex echinator</i>	XP_011064338.1
	<i>Pseudomyrmex gracilis</i>	XP_020284828.1
	<i>Cataglyphis hispanica</i>	XP_050455871.1
	<i>Formica exsecta</i>	XP_029672853.1
	<i>Nylanderia fulva</i>	XP_029155503.1
	<i>Solenopsis invicta</i>	XP_011171429.1
	<i>Temnothorax longispinosus</i>	TG Z32040.1

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M-WD-D-EPAPWDIE-ETAP-EE-TGDQEG--A-KEG-G---AEGAA--PGELPKVKLEKI
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M-WD-D-EPAPWDIE-ETAP-EE-TGDQEG--A-KEG-G---AEGVA--PGELPKVKLEKI
M-WD-D-EPAPWDIE-ETVP-EE-TGEQEG-A-KEG-G---AEVVA--PGELPKVKLEKI
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M-WD-D-EPAAWTDIE-ETAP-EA-AA-EG-A-AEG-AP-AE-GA-APEKPVKLEKI
M-WD-D-EPAPWDVQ-EEAPPEAA-AA-EG-A-AEG-AP-AEGA-APEKPRITLLKL
M-WD-D-EPAPWDAAE-EPAP-A-AA-DG-A-AEG-AP-AEGAP-ATEKPVLLKLLKL
MSWA-DDEEAPWDIE-EPAA-EA-VA-EG-A-GEG-AP-AE-AA-TDREVLKLLKL

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EPFHYNNHHWVRPLFLNYA - YLYDYRKNYYDDVIDYLDRSQKGIYREPPRAQEWAEARMTYDEKNV
EPFHYNNHHWVRPLFLNYA - YLYDYRKNYYDDVIDYLDRSQKGIYREPPRAQEWAEARLTRTYDEKNT

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Figure S1. Protein Homology

Table S2. Primers details

primer name	Primer No	primer sequence 5-3
blue.fasta-1		
RT1569-A-P1F	P1	CATTGCATCTGTTTGATATAAAAGAGC
RT1569-A-P1R		CTTTAGCGATTCTAACTTCGACACT
RT1569-A-P2F	P2	GGGATACCTAACTACGTGCAGTTTC
RT1569-A-P2R		TCCATTTGATGCTTGCTTTATTC
ul.fasta-1		
RT1569-C-P1F	P3	ATCTTTTAAAAAGAACCATTGTTG
RT1569-C-P1R		GGTATCGGTTAAATAATCAAAAGAACAG
RT1569-C-P2F	P4	ATGGAAAAATTATCACGTGGTCAAGT
RT1569-C-P2R		TTATATGCCAGGAATTTACTTTATTGG
Vespa velutina flightin (LOC124952177), mRNA(1).fasta-1		
RT1569-D-2F	P4	ATAAAAGCAAGAAAGAAGGCAAGGT
RT1569-D-2R		TATCGGCGGATCTCTTAATACTCTT
RT1569-D-P2F	P5	CGCCCATATTTCTCAATTATGACT
RT1569-D-P2R		TAAGTAAAAGTGCACGTGATTTTATAAT

S5. full length of flightin

identification number	sequence
blue.fasta-1	<p> CATTGCGATCTGTTTGATATAAAAGAGCTCACTAAGCTTTGGTACGGGTCAAGTGAGTTGCGGAACGTGCT  GTCAACTTATCGACCGCTCTCACTTCAATTGAGATTGCAACGGACGTAGAAATAAGTAGAAGTTTA  TTTTACATCTTAACTTGACATATCTATTCAAGGTCCTAAGGGTTGAAACCTTTTGGACGTGGATAGGACG  AGTCAAGACGACCACTAAAACCTTCTCTCGTTGAGACATCTCGTTTATCTCGGAAGATCCATTTTAACGA  TTCGTCAGTCTACCAACCGAGGACACAGCCTTGAAGAAGGATGCTGCTGCAAAACTATACCTTCGAGA  ACGGCCCTCAGCCTTTTGTAGGCGGAATGGGAGAGGTCCAACAAATGCAAGAAAGATTTTGGGATG  GAACGTACCAACCGGAACACATGGGACTCGTACACGTTTCATTGGAGGGGCTACCTAGCACCTGGAAAAAT  ACTGGCACATTGGTCTCTCGCTTATTATTTTATGCTGTTTGTGTCATGTCGCTGTTGGAAATGGATGCGTC  GTATGGATATTAGACATCAAAAGCTCTTAGGACACCCCTCGAACATGTTTATCGTCAATTTGGCTATATT  CGATCTAACGATGGCGTTAGAAATTCACATTTTATAATAAATAGCTTTATACAACGCATTTGGGGTTGG  GAGATTGGTTGTGCTATATTGCAATTTTGGGCAGTATTTCTGGTATCGGGCAGGCAATCTCCAACGTTG  CCATTGCCTACGATCGTTACAGAACGATATCGTGCCGATCGATGGTAGACTAAACGGATCGCAAGCTG  GATTGATCGTTGCATTTACTTGGTTCTGGGCTTTACCATTTTCAGTTTACCTCTTATAGAGGTATGGGG  AAAATTTGTACCAGAGGGATACCTAATACATGCAGTTTCGATTTTCTAACGGATAACTCGGATACGAG  GGTTTTCGTAGCTTCGATCTTTCTTTGGTCTTATCTTTACCATTGACCCTCATAGTTTATTTTACTCGCA  ATTGATTAGATCCATTAGACAACACGAGAAGATGCTTCGCGATCAGGCAAAAAAATGAACGTGAAAT  CTTTGGTTTCAAATCAGGATAAAGAACGTAGCGTCGAAGTAGAATCGCTAAAGTAGCGTTCACTATTT  TCTTCTATTCTCTGCGCGTGGACGCCCTATGCTGTTGTGCGCTGTTATCGGTGCTTTTGGTAATAGCGA  CTTGTGACACCTCACGTAGGTATGTTACCAGCAGTTTCGCAAAATCGGTTTCGTGCATAGATCCATGG  ATTTATGCCATCAATCATCCAAGGTATCGTCAGGAATTACAAAAGCGATGCAAGTGGATGGGAATACGA  GAACCCGAACCAAGTTGCAGACAATGTTTCAGCGCAGACTGAAAAACCTTAAGGCAGACGAAGCATAA  TCTAAATGTTTATGTACTTTATGAAAAATGAAAAACGACGGCATGGATGATCGATCGTATCGAATCGT  CAATCCACCACCGATTGACATCGATCTTTGTCTCGTCTACGATTTCTTTTATTGTCAATATATTATAAT  AGAAATTATTACCAAAATATTCTGTATAAAATTTGTCGTTATTATTATTATTATTATTATTATTATTAT  TCTTATTATTATTATTATCATTTATACAGTAGAACGTGGCACATACACGCTAATCTGTGGTTTCTTATATA  AATTTGAATAAAGCAAGCATCAATGGA </p>
ul.fasta-1	<p> ATCTTTTAAAAAAGAACCGATTGTGGATTAAATTTCTACTTTTGTTCATACAAAAATGGATACTAA  AAATGGAACATAATCGACACAAAAAAGATACTATGAAAAAGTAGTCAACAGCAATGAAGATAAGA  ATGTATACTATAATTGAAATCGATTGATTGACTTTGAAGTTTGCTCTTGCTGACCAACGGTAATCA  AGGGATGATCCGTAGCTGATCCTCAAATGAAGCCATATCGTCGAGCTGATTAAGGTTTCATGGATT  TATTTTGACAGATATGGTATAAAAGGCCACATCTTGGTTAATTAACAAAAACAGGTGAGGACTGGTA  GACGGTGACCACCAACATGTTCAACGACAGTATTTCATTGGGAGGCGAGAGTTTACCAGCAGGTCC  ACCACGCCTATTGGGATGGAACGTCCTGCCGAAGAATTGGTACATGTACCGGAACATTGGCTGGTC  TTTCTGAACCAATCCCTCCCTCATTATATGCTGGCCCTGTTATATATATTATTCACATTCATTGCTT  TACTTGGCAATGGTCTCGTCATATGGATATTTGCGCTGCCAAATCCTTGAGGACTCCCTCGAACATG  TTCGTTGTGAATCTTGCGATTTGCGATTTTGCCATGATGATGAAGACACCAATTTTTATATACAATTCA  TTTAACACCGGCTTTGCTTTGGGCAATCTGGCATGCCAGATTTTGTACGATTGGTTTCATTGCTGG  CATTGGTGCAGCGGTAACATAATGCTGCGATAGCATATGATAGATACAGTACCATAGCCAGACCATTG  GATGGAAAAATATCACGTGGTCAAGTGATTCTCTTTGTCGGATTAATTTGGGTTTACGTTTGGCTTG  GGTATTAATGCCTGCAATGGGTGTTTGGGGTCGTTATGACTCGTAAGGATTCTTACAAGCTATTGCTT  TTGATTTATTAACCGATACCGCTGAAACAAGATATTCGTTTAACTTATTTATTTCTCCTATTGTTT  ACCAATGTCACTTATTGTATATTATTACAGTCAAAATGTTAGTCATGTTGTTAATCACGAAAAGGCTCT  TCGAGAAACAAGCAAAGAAGATGAACGTTGAAAGTTTACGAAGTAACGCCAATCAGAATGCTCAATC  TGCTGAAATTCGTATAGCGAAGGCTGCCATTACGATTTGTTTCTATTTGTTGCCGATGGACACCAT  ACGCAGTACTTGCTATGATCGGTGCATTTGGAACAAGCGTTGCTTACTCCGGCGTTACTATGATC  CCTGCATGCTTTTGCAAAAGTGTTGCTGTATTGATCCATATGTTTATGCGATCAGTCATCCAAAATA  CAGACTCGAGTTGCAAAACGATTACCATGGTTAGAGCTTCAAGAGAAACCAATCGCATCCGACAGT  GCAAGTACAACCTACCGAACTGTAAATACAGCACCACCAGCTTCGAGTTAATCTACTTCTACATTTGA  CACAATAACGGATCGATGATAAAAAAATGAAAAAGTACGCTCGTAATACTCCGATTGTATGAT  TGCCTTCACTGTAACCTCAAAATATGTGATTATATTCTGTATAGTAAATGACATTCCAATAAAGTAAAT  TCCTGGCATATAA </p>

<b>Vespa velutina flightin (LOC124952177), mRNA(1).fasta-1 partial experimental sequence</b>	ATAAAAGCAAGAAAGAAGGCAAGGTCCCCGCGAGTGCGGAAGCTTCAAAGACGAGAGGGTAGTTT TTTTTGCAGTCTGTATAGGTGCTTCGTAGAGCGAGCATCGTAGCAAAGGCTTTCTAAAGAGAATTGA AGAAAAAGAAGAAGAAGTAAAAGAAGGATGTGGGACGATGAACCAGCTCCGTGGGATATCGAAG AAACGGCTCCCGAAGAAACAGGAGACCAAGAAGGAGCCAAGGAAGGGGGAGCTGAAGGGGCTGC ACCCGGTGAACACCAAAAGTAAAGCTCGAAAAGATCGAACCTCCAAAGTACAATCATCATTGGGTG CGCCCATTTTCTCAATTATGACTATCTTTACGATTACAGGAAGAATTATTACGACGACGTAATCGA CTATCTCGATCAAAGACAAAAGGGTTTGTATCGTGAGCCTCCAAGAGCACAGGAATGGGCAGAAAG GACCATGAGGACGTACGATCAGAAGAACCTTGATAAGAGTACTAAGAGATCCGCCGATATGAAATA CATCACTAAAATGATAGTTACGCCAAGACATTATAGCTATCATACGCGGGCATATTATAGCTTGAAGT ACCAGAGAATTCTTTGAGTTATCATTTTTGATGGAGAATGATCGGCGAAGATTGACGATTAAAGATC TTACACTATTCTTCGTCGATATTGCTATTACCGATAATGCCAGTGGAATCCTTTTTTAATCGGCTTA CCTATACGTTGTATATAACATCATCTTAGACATGAGGATGTTGTATTTAAAAATAAATCGTAGTCGT CGTAGATATTTATTCTGGATCTTTCATTAACGAGGGAAAAGATCACGGTTTACCTCTGGCCAAATTT ATTTATCGAGTAGCACTTATCGTCTAATGTATCGATAATTTCAATTTCTAGATAAATTCGATTTCGATTTC ATACGCGATTCAATTTATCTTCGTAGATATATTTTTTCATAAATAGGGACAAACATTGCGATAGAATT CGATATCTTATCCCATCAACAAATCAATCGTCATAAATTTAAACGCGTACTCGTTTTATTGTTTCGTTT GATTATTTATTTGTCATCAATTTTATGATATAGCTATGACGTGCTTATGTACTATGCCTATTGTATATG TATTACTGTTATAAATCGGTATTATAAAATACACGTGCACCTTTACTTA
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