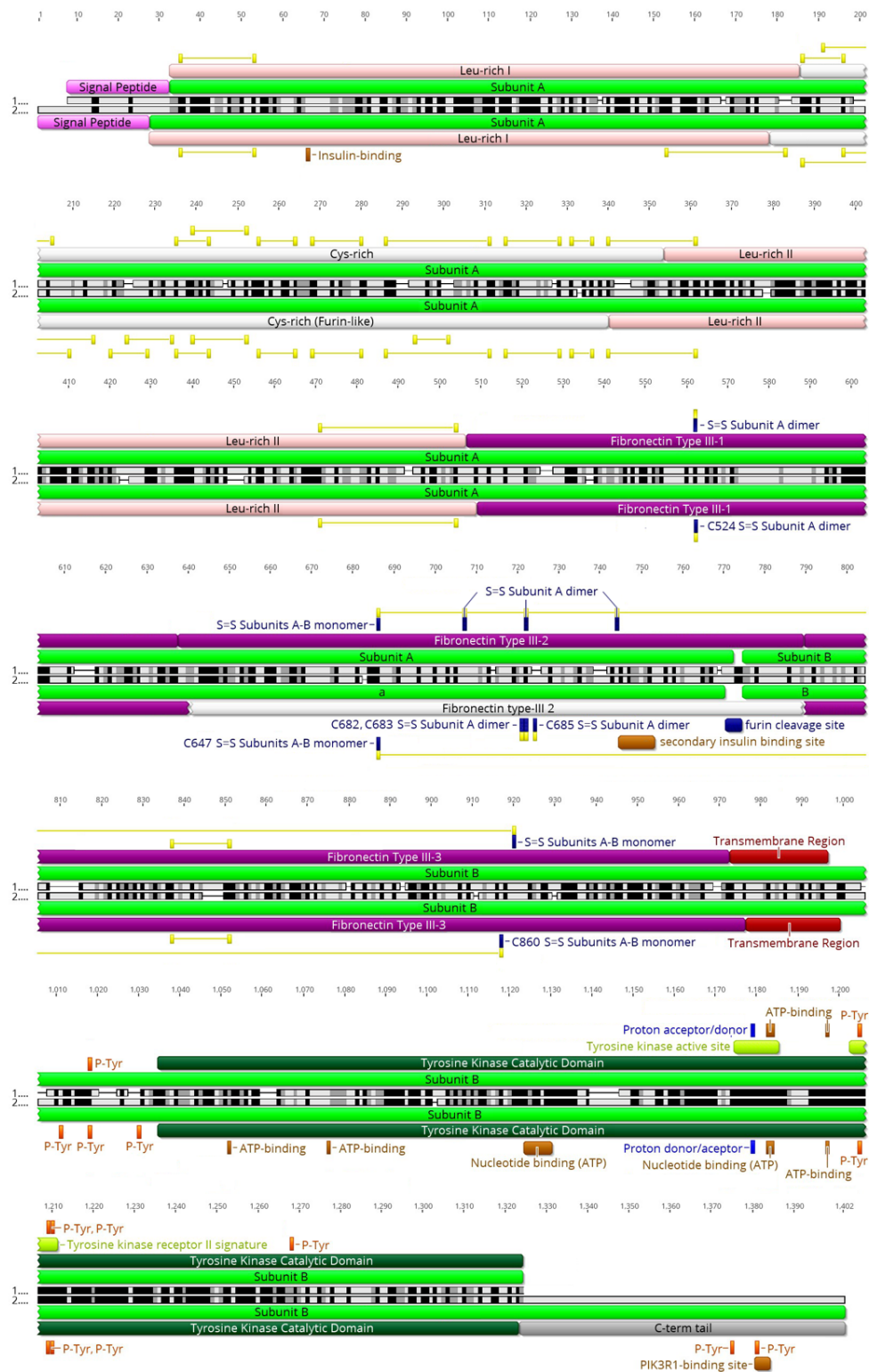


**Supplementary Table 1. Gene specific primers.**

<b>quantitative PCR – 5'-3' 157 bp amplicon</b>	
IR qPCR Forward	AGCTCCCAGATTGTCTACGG
IR qPCR Reverse	CCGGGTCGAATCAACTAGG
<b>dsRNA – 5'-3' 475 bp amplicon</b>	
IR Forward	GAGATGATTGTTTATTGGGTGC
T7-IR Forward	<b>TAATACGACTCACTATAGGGAGAG</b> AGATGATTGTTTATTGGGTGC*
IR Reverse	GGGTGCAATTTGATCCCACT
T7-IR Reverse	<b>TAATACGACTCACTATAGGGAGAG</b> GGGTGCAATTTGATCCCACT*

\* **TAATACGACTCACTATAGGGAGA** = T7 RNA polymerase promoter



**Supplementary Figure 1. Graphic alignment highlighting the structural similarities between Rhopr-IR and human IR.** The IR monomers were aligned, and subunits A and B are highlighted by green and purple boxes, respectively. Signal peptides are highlighted in bright pink, followed by Leu-rich domains highlighted in pale pink and Cys-rich domains in light grey. Disulfide bonds are identified by yellow boxes over Cys residues, connected by yellow lines when the bonds are formed within the monomer. Fibronectin Type-III domains are

indicated by purple and grey boxes. The Cys residues that form disulfide bonds involved in the dimerization of the receptor are indicated by yellow/dark blue boxes over said residues. The Cys residues that form the disulfide bonds between subunits A and B of each monomer, are indicated by yellow/dark blue boxes over the residues and connected by yellow lines. The transmembrane regions are highlighted by red boxes, and the Tyr kinase catalytic domain by dark green boxes. Tyr residues that are phosphorylated upon activation of the receptor are indicated with small orange boxes. ATP-binding sites between the active site and the receptor signature are indicated with brown boxes over the residues.

CLUSTAL multiple sequence alignment by MUSCLE (3.8)

```

Drosophila_melanogaster      -MFNMPRGVTKSKSKRGKIKMENDMAAAATTAKTACTLGHICVLCRQEMLLDTCCCRQ
Halyomorpha_halys           -----
Rhodnius_prolixus           -----
Cimex_lectularius_X1        MNGMRPRNSMEGGAWVGVGGGHGGPSLLAVHQCTLTPES-----
C._lectularius_X2           -----
Cryptotermes_secundus       -----
Miniopterus_natalensis      -----
Callithrix_jacchus          -----
Heterocephalus_glaber_X1    -----
Dasypus_novemcinctus        -----
Tupaia_chinensis_X2        -----
Homo_sapiens_X1             -----
Pongo_abelii_2              -----
Pan_troglodytes_X2          -----
Boleophthalmus_pectinirostris -----
Larimichthys_crocea_X2      -----
Larimichthys_crocea         -----
Lates_calcarifer            -----
Seriola_lalandi_dorsalis    -----
Seriola_dumerili            -----
Zootermopsis_nevadensis     -----
Parasteatoda_tepidariorum   -----
Onthophagus_nigriventris    -----DACSERKA-----
Nicrophorus_vespilloides    -----
Tribolium_castaneum         -----
Nilaparvata_lugens          -----
Blattella_germanica         -----
Nasonia_vitripennis_X1      -----MSNLHRSTMTTTTSGCIET-----
Microplitis_demolitor       -----MKSSVISKKEKDKKEIML-----
Neodiprion_lecontei         MGRRTVNNMRWREHQR---NENDDGSVATTTTKTANESSTSI-----
Athalia_rosae               -MMKNSRRLQRRNSKNCSTSSSTDDRVNGVGSVMTRNFNAIKKSNGINDDEDCCNNDVN
Orussus_abietinus           ---MKPCESIGSPVAVNWDACSAPNYDT-----PIKPADDGE-----
Dufourea_novaeangliae      ---MKSAAWCTRRLGSASSVDDSDASPEEVYTTTSVRCSNIAAATTRISCGVTAIVDAA
Megachile_rotundata_X1      -----
Melipona_quadrifasciata     -----
Apis_mellifera_X1           --MEPSTWCTRLGGGVATSAESTIAVTLAKLGATTSSRLSSDASAIIPQPD-----
Eufriesea_mexicana_1        --MESPTWCTRLGGSSAIESSSSSRLSIASNPNVNDRSSETDTTPC-----
Eufriesea_mexicana_2        -----
Bombus_terrestris           --MEPLTWCTRLGGSVAAESEESTIAVTLAKVAATTSSRLSTNANPNVNDCSSTTTWICET
Bombus_impatiens            --MEPLTWCTRLGGSVAAESEESTIAVTLAKVAATTSSRLSTNANPNVNDCSSTTTWICGT
Polistes_dominula_X1        ---MYFSRMRMRMEIHEELNRNSSSSNSSSSSSSSSSSSRKSTRSTTRISSTLDD
Cephus_cinctus_X1           ---MTLTDCSSLLTGNCLEYS-----
Dinoponera_quadriiceps_X2   MGKMKSAACTTRLAGTATFDEDE-PSAV--P-----SSSEARSNT-----
Harpegnathos_saltator_X1    MVKMKSAACTTRLRGATFDEDESRAVSPS-----PSPKIRSNT-----
Linepithema_humile_X2       -----
Linepithema_humile_X1       -----
Ooceraea_biroi              --MKSSAARYRRK-SRGATFDEDEPSTTT--PSSCSCSSSSEAHSTN-----
Camponotus_floridanus       --MKSPA--FACRKNRSATFDVDDEPYAS--A-----ASSSSSETLLVTR-----
Solenopsis_invicta          --MKSSAACYARR-FGGVTFDENESSIVA--P-----FLSEANSTT-----
Pogonomyrmex_barbatus_X1    --MKSSAACR---LCGATFDEDESSIAS--T-----SFPEADHAI-----
Vollenhovia_emeryi_X1       --MNFSGACHARR---LGSVDESSTVAA--L-----SSSEANFST-----
Wasmannia_auropunctata      --MKSSAACYTARRLRGATFDEDEVPSIVA--S-----SFSEANSTT-----
Cyphomyrmex_costatus        -----
Trachymyrmex_septentrionalis --MKSSAACYTSRGLRDAMFDEGERSVVA--S-----SFWEVDSTT-----
Atta_colombica               -----MISETKEAS-----
Trachymyrmex_cornetzi       --MKFSATCYTRR-LRGVTFDEDERSIVA--S-----SFSEVNSTT-----
Acromyrmex_echinator        --MKSSATCYTRR-LRGATFDEDEKQNIVA--T-----SFWEVNSTT-----
Atta_cephalotes             --MKSSATCYTRR-LRGATFDEDEKQNIVA--T-----SFWEVNSTT-----

Drosophila_melanogaster      AVEAVDSPASSEAYSSSNS-----SSCQASSEISAEVWFLSHDDIVLCRRPKFDEV
Halyomorpha_halys           -----
Rhodnius_prolixus           -----
Cimex_lectularius_X1        -----
C._lectularius_X2           -----
Cryptotermes_secundus       -----
Miniopterus_natalensis      -----
Callithrix_jacchus          -----

```

Heterocephalus_glaber_X1	-----
Dasypus_novemcinctus	-----
Tupaia_chinensis_X2	-----
Homo_sapiens_X1	-----
Pongo_abelii_2	-----
Pan_troglodytes_X2	-----
Boleophthalmus_pectinirostris	-----
Larimichthys_crocea_X2	-----
Larimichthys_crocea	-----
Lates_calcarifer	-----
Seriola_lalandi_dorsalis	-----
Seriola_dumerili	-----
Zootermopsis_nevadensis	-----
Parasteatoda_tepidariozum	-----
Onthophagus_nigriiventris	-----
Nicrophorus_vespilloides	-----
Tribolium_castaneum	-----
Nilaparvata_lugens	-----
Blattella_germanica	-----
Nasonia_vitripennis_X1	-----SSCRC-----CCSCG-----RELS-----
Microplitis_demolitor	-----GCPNCLVHL-----ELST-----
Neodiprion_lectonetei	-----LNSLC-----YSCRIC-----QADEAGRDKNENT-----
Athalia_rosae	TKVVTSSSTSASEDDVENFCDKGAKVFQCRNCSPGTALGEELDNEEYGRAIDGSSPLTGR
Orussus_abietinus	-----NY-----SCSNCLALQ-----VKVTEDFVDS
Dufourea_novaeangliae	TTGCAVTTNTSTTTCHCHCPSGRDTLECADPSHFLSSSSTMSASTGPNRTTT-----
Megachile_rotundata_X1	-----
Melipona_quadrifasciata	-----
Apis_mellifera_X1	-----PCPSSSPQH-----
Eufriesea_mexicana_1	---LADTSADASSASCHCHCSSGCVATRSHSWSSRL-----
Eufriesea_mexicana_2	-----
Bombus_terrestris	TCRLTDTSEDANSVLRHCHC-----WSGSATPG
Bombus_impatiens	TCRLTDTSEDANSVLRHCHC-----WSSSATPG
Polistes_dominula_X1	QQSTTANFCCPSGGYCFCCC-----CCRCNNGVTMNNKECKMNNMEEHENKDDCIINN
Cephus_cinctus_X1	-----
Dinoponera_quadricaps_X2	-----CHCHC-----P-WSRGAFE-----EALA-----
Harpegnathos_saltator_X1	-----CHCHC-----P-WSRGAFE-----DALA-----
Linepithema_humile_X2	-----
Linepithema_humile_X1	-----
Ooceraea_biroi	-----CHCHC-----PLSSRGVFE-----DVDGVPAAWT
Camponotus_floridanus	-----RYCHC-----P-SICGAFE-----DTSNDASSQS
Solenopsis_invicta	-----CHCHC-----P---CDAFE-----RDDGASSL---
Pogonomyrmex_barbatus_X1	-----RHCHC-----LSSSSREFE-----KTDGASF-PS
Vollenhovia_emeryi_X1	-----CHCHC-----PSSSCGAFE-----KDDGVSSFLPS
Wasmannia_auropunctata	-----CHCQC-----PSSSCGAFE-----KDDGVSFPLPS
Cyphomyrmex_costatus	-----
Trachymyrmex_septentrionalis	-----CHCHC-----PSSSCGAFG-----KDDGVSFPPS
Atta_colombica	-----CSLMH-----RLNCC-----TLLLP-
Trachymyrmex_cornetzi	-----CHCHC-----PSSSCGAFE-----KDDGISFLPS
Acromyrmex_echinator	-----CHYHY-----PSSSCGAFE-----KDDGVSFPLPS
Atta_cephalotes	-----CHYHY-----PSSNCGAFE-----KDDGISFLPS
Drosophila_melanogaster	ETTGKKRDVKCSGHQCSNECDDGSTKNNRQQRENFNIFSNCHNI-----
Halyomorpha_halys	-----
Rhodnius_prolixus	-----
Cimex_lectularius_X1	-----LLHLAQVRDRVAALR-----
C.lectularius_X2	-----
Cryptotermes_secundus	-----
Miniopterus_natalensis	-----MGTLGICEGENRLAEKPLPLPGESVGP-----
Callithrix_jacchus	-----
Heterocephalus_glaber_X1	-----
Dasypus_novemcinctus	-----
Tupaia_chinensis_X2	-----
Homo_sapiens_X1	-----
Pongo_abelii_2	-----
Pan_troglodytes_X2	-----
Boleophthalmus_pectinirostris	-----
Larimichthys_crocea_X2	-----
Larimichthys_crocea	-----
Lates_calcarifer	-----
Seriola_lalandi_dorsalis	-----

Seriola_dumerili	-----
Zootermopsis_nevadensis	-----
Parasteatoda_tepidarium	-----MVVIVIFKGEAAMG-----
Onthophagus_nigriiventris	-----GPLLCRISHPMASKSICG-----
Nicrophorus_vespilloides	-----
Tribolium_castaneum	-----
Nilaparvata_lugens	-----MEDSACPGCSLRPTNVGRR-----
Blattella_germanica	-----
Nasonia_vitripennis_X1	-----AARLCPLCQRLQHDS-----KACGDE-----
Microplitis_demolitor	-----FTDQCQLCDRLCNES-----KSVTFI IQK-----
Neodiprion_lecontei	VG-----YR-----CEICERLQGSVGDDVDLSTNEE-----
Athalia_rosae	LG-----HRQKPQQQCELCERLQGCESKDKSSVDGNERRGAGGGAGAGAGGGECC
Orussus_abietinus	-----EFLQCDICKRLRNSA-----ENHEEGCNEV-----
Dufourea_novaeangliae	-----ISNSCELCERLRGRC-----
Megachile_rotundata_X1	-----MTSCGTSNRVTDPTLS-----
Melipona_quadrifasciata	-----
Apis_mellifera_X1	-----HDHGPFPSLCDLCERLRGRLVSGGRSETDEEEE-----
Eufriesea_mexicana_1	-----NRSNVCDCERLRGRS-----
Eufriesea_mexicana_2	-----
Bombus_terrestris	HDGPPLSLFLPNRQNSNVCDLCERLRGRS-----
Bombus_impatiens	HDGPPLSLFLFLPNRQNSNVCDLCERLRGRS-----
Polistes_dominula_X1	NN-----NHHQFATRTRCVCERLHGSSLNSSDHRFDEIDTNYNN-----
Cephus_cinctus_X1	-----SRLRCEICKRLCPTE-----
Dinoponera_quadriceps_X2	-----SPASTSMCDRLRDRT--D--RDLLDVI-----
Harpegnathos_saltator_X1	-----SPSTTSVCERLRHRT--D--RDLLGAI-----
Linepithema_humile_X2	-----MACDLCERLRGRT--D--GHFDLVDAI-----
Linepithema_humile_X1	-----MACDLCERLRGRT--D--GHFDLVDAI-----
Ooceraea_biroi	-----SAVTCDCERLRGRT--G--RRSDPVDAT-----
Camponotus_floridanus	PS-----ESTSMSTTCDLCERLRGQT--D--GCSDTMDAI-----
Solenopsis_invicta	-----STACDLCERLRGQT--G--RCYDSVDRVDRVD-----
Pogonomyrmex_barbatus_X1	TS-----ASTTCDLCERLRGRT--GGSNASSDVSAI-----
Vollenhovia_emeryi_X1	PA-----PATACDLCERLRG--C--YDSVDAT-----
Wasmannia_auropunctata	PV-----TTTACDLCVRLRGQT--S--YDSVDAI-----
Cyphomyrmex_costatus	-----ISKTKEASCSLMHRL-----
Trachymyrmex_septentrionalis	SA-----STTACDLCERLRGQT--G--YEPVNAT-----
Atta_colombica	-----
Trachymyrmex_cornetzi	PA-----STITCDLCERLRGQT--G--YESVNAI-----
Acromyrmex_echinatior	SA-----STTACDLCERLRGQT--G--YESVNAI-----
Atta_cephalotes	PA-----STTACDLCERLRGQT--G--YESVNAV-----

Drosophila_melanogaster	----LRTLHSLLLLMFNCGIFNKRRRRQHQQQHHHHYQHHHQH-----HQQHLQRQQ
Halyomorpha_halys	-----
Rhodnius_prolixus	-----
Cimex_lectularius_X1	-----RRAQHARVNSLLRDSAPTKQN-----S
C_lectularius_X2	-----
Cryptotermes_secundus	-----
Miniopterus_natalensis	-----RSSVHEAGPATNSSNPPIACE-----
Callithrix_jacchus	-----
Heterocephalus_glaber_X1	-----
Dasypus_novemcinctus	-----
Tupaia_chinensis_X2	-----
Homo_sapiens_X1	-----
Pongo_abelii_2	-----
Pan_troglodytes_X2	-----
Boleophthalmus_pectinirostris	-----
Larimichthys_crocea_X2	-----
Larimichthys_crocea	-----
Lates_calcarifer	-----
Seriola_lalandi_dorsalis	-----
Seriola_dumerili	-----
Zootermopsis_nevadensis	-----
Parasteatoda_tepidarium	-----RRSMPP-----
Onthophagus_nigriiventris	-----
Nicrophorus_vespilloides	-----
Tribolium_castaneum	-----
Nilaparvata_lugens	-----
Blattella_germanica	-----
Nasonia_vitripennis_X1	-----RRGSRRKNHHQREDSGRRR-----KYDDNTEKD
Microplitis_demolitor	-----NKSSMNDKSRVKTD-----WRSDKVTLI
Neodiprion_lecontei	-EEKKKKDEEDHRG-----KRRSRLFSRGFFNASSKLEPL-----AMDCGRQS

Athalia_rosae	YTDGRNRNRNGH-----QTKRGSKEYGDVNDGCTGHPMDPVSPSPMDCGRRC
Orussus_abietinus	-----SYRQGYLQRLFFAFSSGKIG-----ST-----C
Dufourea_novaeangliae	-----DSPERRTIGDRETIRRGHEVSRDPDHAMTLRSRTFEEDRFC
Megachile_rotundata_X1	-----
Melipona_quadrifasciata	-----
Apis_mellifera_X1	-----G---GRGRMTRRGRSVADRGHASAGVVSADKRR-----
Eufriesea_mexicana_1	-----RNCSTLDGTAEGRFDRAPRREQRRPLVPHADHAVAT
Eufriesea_mexicana_2	-----
Bombus_terrestris	-----CDYSTLDEKSTEGRFDRITRRGQRQVVNRDVNHTMIS
Bombus_impatiens	-----CDYSTLDEKSTEGRFDRITRRGQRQVVNRDVNHTMIS
Polistes_dominula_X1	-SSSTSSSSSSSTS---TSTSSSTSSSPKYCRSFYEVSSKSIR-----RKDDKDKWI
Cephus_cinctus_X1	-----EPEEEHPTKSSRQIPCKHKKILASISC
Dinoponera_quadriceps_X2	----RT--EDGLVV---GRS--RRKRDE-NDTLTNH-SEATDQ-----KR-DRTSKC
Harpegnathos_saltator_X1	----RT--EAGLALGRRYGRP--RWKRDERDDSTNHSSEATDE-----ER-DRTTKC
Linepithema_humile_X2	----RT--EDSRMA---DWPS-RRRDE-NNSLTSD-SKASGE-----KR-DRTSRC
Linepithema_humile_X1	----RT--EDSRMA---DWPS-RRRDE-NNSLTSD-SKASGE-----KR-DRTSRC
Ooceraea_biroi	----RT--EDVLAA---DRRPLRRKQHD-ENGSSKSDLAAIE-----KR-DRTLRC
Camponotus_floridanus	----RT--EEHFG---QRD--RRKRDE-SANSRAK----IVE-----KR-DRTLRC
Solenopsis_invicta	-ATEWT--GDSHAA---DRSS-RRKSDE-NDLSVND-SRVTV-----KR-DRTLKC
Pogonomyrmex_barbatus_X1	----WT--RDSHAA---DHQSPRRKRDE-NDLSACDSAEPVIG-----RR-DRTLRC
Vollenhovia_emeryi_X1	----WT--GDSHVA---HRSS-RRKRDK-NDSLAND-SGAIVG-----KR-DRTLRR
Wasmannia_auropunctata	----WTPGDGSHVA---DRSS-RRKRDK-NDSPANDSSEATVG-----KRGNRTLRC
Cyphomyrmex_costatus	-----
Trachymyrmex_septentrionalis	----RT--GDSHVA---DR-S-RRKREK-NDLLTND-SKTTV-----
Atta_colombica	-----RARRDL-ALSIVN-----SRKLCC
Trachymyrmex_cornetzi	----WT--GDGHVA---DR-S-RRKRDK-NDLLTND-SKTTVG-----KR-DRTLRR
Acromyrmex_echinator	----WT--GDSHAA---DR-S-RRKRDK-NDLLTND-SKTTVG-----KR-DRTLRC
Atta_cephalotes	----WT--GDNHVA---DR-S-RRKRDK-NDLLTND-SKTTVG-----KR-DRTLRC

Drosophila_melanogaster	ANVSYTKFLLLLQTLAAATTRLSLSPKNY-----
Halyomorpha_halys	-----MQAALGLY-----
Rhodnius_prolixus	-----HQEMIVYW-----
Cimex_lectularius_X1	WRTGSPSISTCERTDLTFVMLLAFW-----
C._lectularius_X2	-----MLLAFW-----
Cryptotermes_secundus	-----MWNML-----CA-----
Miniopterus_natalensis	-----
Callithrix_jacchus	-----
Heterocephalus_glaber_X1	-----MGAW-----
Dasytus_novemcinctus	-----
Tupaia_chinensis_X2	-----
Homo_sapiens_X1	-----
Pongo_abelii_2	-----
Pan_troglodytes_X2	-----
Boleophthalmus_pectinirostris	-----MWLRT-----
Larimichthys_crocea_X2	-----MVSYPESVMWLRT-----
Larimichthys_crocea	-----
Lates_calcarifer	-----MVSYPESV-----
Seriola_lalandi_dorsalis	-----MVSYPESV-----
Seriola_dumerili	-----MVSYPESV-----
Zootermopsis_nevadensis	-----MW-----
Parasteatoda_tepidariorum	-----
Onthophagus_nigriventris	-----LADTGRLCSWLLVAV-----
Nicrophorus_vespilloides	-----
Tribolium_castaneum	-----
Nilaparvata_lugens	-----TRRGGGLRGGYGDDVSW-----
Blattella_germanica	-----MDTDWWRW-----
Nasonia_vitripennis_X1	FR-----STTTSTRRRRSASSV-VRWVSA-----KC-----
Microplitis_demolitor	NRQCFM-KPMYRCGIVKSAASV-VRW-----
Neodiprion_lecontei	DVASSLSSTTTT-RRPSCSSLSVLFRLN-----STINVSTIFFIV
Athalia_rosae	DV-----PLQCLRCASSV-VRWRSVPTSHNDRDGVYVDNYTGDKTSNEETNNKHL
Orussus_abietinus	RR-----DSVDEGRWLRCASSV-VRWTQG-----KR-----
Dufourea_novaeangliae	HA-----TTSTSPFTSRSCGPSDVRW-----
Megachile_rotundata_X1	-----SSSSSSSSSNVSSVVRW-----
Melipona_quadrifasciata	-----
Apis_mellifera_X1	-----RPDDGPSSSGCVSSV-VRWNST-----
Eufriesea_mexicana_1	SRITECDRLRPDASSSYVSSV-VRW-----
Eufriesea_mexicana_2	-----
Bombus_terrestris	SKISQRDLVSDASSTSYVSSV-VRW-----
Bombus_impatiens	SKISQRDLVSDASSTSYVSSV-VRW-----
Polistes_dominula_X1	TRENNYSSMQNRGENSRYASSV-VRW-----

Cephus\_cinctus\_X1  
Dinoponera\_quadriceps\_X2  
Harpegnathos\_saltator\_X1  
Linepithema\_humile\_X2  
Linepithema\_humile\_X1  
Ooceraea\_biroi  
Camponotus\_floridanus  
Solenopsis\_invicta  
Pogonomyrmex\_barbatus\_X1  
Vollenhovia\_emeryi\_X1  
Wasmannia\_auropunctata  
Cyphomyrmex\_costatus  
Trachymyrmex\_septentrionalis  
Atta\_colombica  
Trachymyrmex\_cornetzi  
Acromyrmex\_echinator  
Atta\_cephalotes

RR-----NRVDQGRWLRSASSV-VRW-----  
DR----VPLCE-SSARCASSV-VRW-GS-----VA-----  
DR----VPLCE-SSVRCASSV-VRW-SS-----VA-----  
DR----IPLDE-SSARCASNV-VRW-KL-----AS-----  
DR----IPLDE-SSARCASNV-VRW-KL-----AS-----  
DR----VPAVE-SSARCASSV-VRW-NL-----AV-----  
DR----LSRYESSARCASSV-VRWNHL-----AA-----  
DR----TPLRE-SSARCASSV-VRW-IF-----AA-----  
DR----TPIRE-SSARCASSV-VRW-IF-----AV-----  
DR----TPLRE-SSARCASSV-VRW-IF-----AV-----  
DR----TLLRE-SSARCASSV-VRW-IF-----AG-----  
-----NCCTLMLLRA-----  
-----VINSV-TIW-FS-----SV-----  
DR----TPLRE-SSAKCASNV-VRW-MF-----SI-----  
DR----TPLHE-SSAKCASSV-VRW-IF-----SI-----  
DR----TPLHE-SSAKCASSV-VRW-IF-----SI-----

Drosophila\_melanogaster  
Halyomorpha\_halys  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C.\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_novemcinctus  
Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris  
Larimichthys\_crocea\_X2  
Larimichthys\_crocea  
Lates\_calcarifer  
Seriola\_lalandi\_dorsalis  
Seriola\_dumerili  
Zootermopsis\_nevadensis  
Parasteatoda\_tepidarium  
Onthophagus\_nigriventris  
Nicrophorus\_vespilloides  
Tribolium\_castaneum  
Nilaparvata\_lugens  
Blattella\_germanica  
Nasonia\_vitripennis\_X1  
Microplitis\_demolitor  
Neodiprion\_lectei  
Athalia\_rosae  
Orussus\_abietinus  
Dufourea\_novaeangliae  
Megachile\_rotundata\_X1  
Melipona\_quadrifasciata  
Apis\_mellifera\_X1  
Eufriesea\_mexicana\_1  
Eufriesea\_mexicana\_2  
Bombus\_terrestris  
Bombus\_impatiens  
Polistes\_dominula\_X1  
Cephus\_cinctus\_X1  
Dinoponera\_quadriceps\_X2  
Harpegnathos\_saltator\_X1  
Linepithema\_humile\_X2  
Linepithema\_humile\_X1  
Ooceraea\_biroi  
Camponotus\_floridanus  
Solenopsis\_invicta  
Pogonomyrmex\_barbatus\_X1  
Vollenhovia\_emeryi\_X1  
Wasmannia\_auropunctata

-----KQQQQLQHNQQLPRATPQQKQQEKDRHKCFHYKH  
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-----AARKGSLFRLRPGRGVKA-----  
-----MGAGSRRG-----  
-----GARG-----  
-----XMGAGGRRG-----  
-----MGAGDRRG-----  
-----MATGGRRG-----  
-----MGTGGRRG-----  
-----MGTGGRRG-----  
-----HTGGLDMCLV-----  
-----MAATGLTTGGALLFA-----  
-----GVVSVLAA-----  
-----RWQS-----  
-----SRTKIARTTGFWPG-----  
-----SEGGTF--SWFG-----  
LFIANLNYASTTSAHGVY-----DTS DNRYNSNGRHTQH-----  
QYYSKSSPPTTPQRSTSSSSSSSSSSSSSSSSSSSSRLPDNKQTSCLSKYFLNKSASIYS  
-----RM-----PWQI-----  
-----HSWTERSFRWTRKGPS-----  
-----SWNSRRT-----  
-----RSARSLPATSHEQQT-----  
-----ISRLESIWTRQKQ-----  
-----SLRPERSFRWTRQKHA-----  
-----SLRPERSFRWTRQKHA-----  
-----KNLC-YWRL-----  
-----WCTQNFLISWQR-----  
-----RFAGR-SSK-SWRR-----  
-----RLVGR--SK-SWRR-----  
-----RLQA--KST-EWRR-----  
-----RLQA--KST-EWRR-----  
-----RFQD--KST-KWQRI-----  
-----GFH--KST-EWRR-----  
-----RFYADFKSI-EWRR-----  
-----RFYDLKSA-EWRR-----  
-----RFHRDFKLT-EWRK-----  
-----RLYGDFKLT-EWRR-----



Cyphomyrmex_costatus	-----RRDLALVEHTR-----
Trachymyrmex_septentrionalis	-----
Atta_colombica	-----T-----
Trachymyrmex_cornetzi	-----RFYKDFKSI-EWRR-----
Acromyrmex_echinatior	-----RFYRDFKST-EWRR-----
Atta_cephalotes	-----RFYRDFKST-EWRR-----

Drosophila_melanogaster	NYSYSPGISLLLFIILLANTLAIQAVVLP	PAHQHLLHNDIADGLDKTALS	SVSGTQTRWPRS
Halyomorpha_halys	-----VLWLAYFGAAR-----		
Rhodnius_prolixus	-----VL--LYCTGITFL-----	ILGMQPAYTK-----	
Cimex_lectularius_X1	-----RIWWLLTIALSST-----	VMGR-----	
C.lectularius_X2	-----RIWWLLTIALSST-----	VMGR-----	
Cryptotermes_secundus	-----YMYVYLCIGLLVT-----	CSVTQVAKEGGK-----	
Miniopterus_natalensis	-----LTCHAFICIFSLV-----		
Callithrix_jacchus	-----AAAAPLLVAVAAL-----	LLGAAGQMPGPE-----	
Heterocephalus_glaber_X1	-----AATAPLLVAAAAL-----	LVGVTHGLYPGE-----	
Dasypus_novemcinctus	-----AAAAPLLVAVAAL-----	LVGAAGHLYPGE-----	
Tupaia_chinensis_X2	-----AAAAPLLVAVAAL-----	LVGAAGHLYPGE-----	
Homo_sapiens_X1	-----AAAAPLLVAVAAL-----	LLGAAGHLYPGE-----	
Pongo_abelii_2	-----AAAAPLLVAVAAL-----	LLGAAGHLYPGE-----	
Pan_troglodytes_X2	-----AAAAPLLVAVAAL-----	LLGAAGHLYPGE-----	
Boleophthalmus_pectinirostris	-----LCFVVAVCILSC-----	HRANGE-----	
Larimichthys_crocea_X2	-----LCFVLTACCLMMS-----	C---HRASGE-----	
Larimichthys_crocea	-----MCLRGESLQTCVG-----	ETLPNL-----	
Lates_calcarifer	-----MCLRTLFCVLTAV-----	CFLMSCHRTAGE-----	
Seriola_lalandi_dorsalis	-----MCLRTLFCILTAV-----	CIVMSCHRVGTGE-----	
Seriola_dumerili	-----MCLRTLFCILTAV-----	CIVMSCHRVGTGE-----	
Zootermopsis_nevadensis	-----FILVLLLLGLPLS-----	RVDGTVTISLSNPATGGNATTQMTSER-----	
Parasteatoda_tepidariorum	-----LLHLVLLLVFLLS-----	TGEAQRPDREYK-----	
Onthophagus_nigriiventris	-----VVFGEYCNLPVTH-----	AGYITEYNGFTPYNKTSG-----	
Nicrophorus_vespilloides	-----GALLAFISSTPTT-----	SEKMPITAGLSPKAHAYIHS-----	
Tribolium_castaneum	-----MASNPVGLHKHSV-----	SQIPNVKLHSGRSHS-----	
Nilaparvata_lugens	-----VCCLLLCLANPVE-----	AFASLGTLPRLPRVDLSTDRSSPDARG-----	
Blattella_germanica	-----VIIIFFFVMMVPA-----	QLIPQNDIKVVQKSG-----	
Nasonia_vitripennis_X1	-----ALSTGVLLMLLL-----	TLGRAVAENAKTAVEGTAPN-----	
Microplitis_demolitor	-----LIWIILILCPIVT-----	ASFTERSTQTFHPTEGE-----	
Neodiprion_lecontei	-----FDHAVRIDSSSS-----	SSSAVAAAATSSSSSTSSSA-----	
Athalia_rosae	SVRLKFSWTFALIIILT-----	ANVNVANAQVNRVNTEISTAVTKRD-----	
Orussus_abietinus	-----LWLTAMVLLTLA-----	A--PCVIADSQNSILANTSV-----	
Dufourea_novaeangliae	-----LAWTILFLLVLVF-----	PALAGLQKGISKSSSKEDG-----	
Megachile_rotundata_X1	-----LLWTFLLFLLVLVF-----	PALADPKKETSRSLSKEDG-----	
Melipona_quadriasciata	-----MSSLACGGFDPPG-----	PDRPAMMEKKGEGRKEQLGG-----	
Apis_mellifera_X1	-----LWTILFLLVLVLV-----	FSASADLQKPTSRERSKKEG-----	
Eufriesea_mexicana_1	-----FAWMILFLLVLVF-----	PASADLQKGTSSGSSKEEG-----	
Eufriesea_mexicana_2	-----MV-----		
Bombus_terrestris	-----LAWTILFLLVLVP-----	STSANLQKGISRGSSKEEG-----	
Bombus_impatiens	-----LAWTILFLLVLVP-----	STSANLQKGMSRGSSKEEG-----	
Polistes_dominula_X1	-----AFSIALFL--AL-----	TFPPNAVASLQRK-HSVGYS-----	
Cephus_cinctus_X1	-----LTAIILLIIASFV-----	LPASAEFLSPPIITEVTASSSKTE-----	
Dinoponera_quadricaps_X2	-----LFSIILLIL--AL-----	SGLVAAQRR--TAIGPS-----	
Harpegnathus_saltator_X1	-----LFSVIFLL--AL-----	PGLVTAQRH--TAMGPS-----	
Linepithema_humile_X2	-----LMWIVFLLAMVSM-----	VIHPGLAAAQKN-ISTVKSF-----	
Linepithema_humile_X1	-----LMWIVFLLAMVSM-----	VIHPGLAAAQKN-ISTVKSF-----	
Ooceraea_biroi	-----LLWIAVLIL-ASV-----	PNLAMAQQSKFGAIGPL-----	
Camponotus_floridanus	-----LLWIVFLVFLASS-----	PDLAAQQN--STDG-----	
Solenopsis_invicta	-----FLWIVLFIF--AI-----	CNLAAANNI--AIGPSR-----	
Pogonomyrmex_barbatus_X1	-----LFWIVLLML--AV-----	PDLAAAKEN--KTADDK-----	
Vollenhovia_emeryi_X1	-----LLWIVLLIL--AV-----	PDLAAAHDA--ANSGPS-----	
Wasmannia_auropunctata	-----LLWIVFLIL--AV-----	PDFAAAHTD--A-IGRS-----	
Cyphomyrmex_costatus	-----NHCIVNVGVSVSA-----	LLIPSRYVSFVA-----	
Trachymyrmex_septentrionalis	-----		
Atta_colombica	-----		
Trachymyrmex_cornetzi	-----LLWIVLLIL--TV-----	PDLAAAHDT--G-LDNG-----	
Acromyrmex_echinatior	-----LLWIVLLIL--TI-----	PDLAAAHDT--D-LDNG-----	
Atta_cephalotes	-----LLWIVLLIL--TV-----	PDLAAAHDT--G-LDNG-----	

Drosophila_melanogaster	ESNPTMRLSQNVK-PCKSMDIRNMVSHF-----NQLENCTVIEGFLIDLINDASP---
Halyomorpha_halys	-----VCPSMDIRNSASAL-----LNLEPCSRIQGYLQIVLMENETESNF
Rhodnius_prolixus	-----ICPSMDIRNTVSAL-----NKLACRVIDGYFSFVLIDYADESEY

Cimex_lectularius_X1	-----TCPSMDIRNNVTNF-----NLLRGCSVIDGFLHIVLIDKSSQQDF
C_lectularius_X2	-----TCPSMDIRNNVTNF-----NLLRGCSVIDGFLHIVLIDKSSQQDF
Cryptotermes_secundus	-----ICRSMDIRNRVQAL-----QRLSGCRVVEGFVRVVLIDRANETDY
Miniopterus_natalensis	-----VCPMSDIRNNLTRL-----HELANCSVIEGHLQILLMFKTRPEDF
Callithrix_jacchus	-----VCPGMDIRNNLSRL-----HELENCVIEGHLQILLMFKTRPEDF
Heterocephalus_glaber_X1	-----VCPGMDIRNNLTRL-----HRENCSSIIEGHLQILLMFKTKPEDF
Dasypus_novemcinctus	-----VCPGMDIRNNLTRL-----HELENCVIEGHLQILLMFKTRPEDF
Tupaia_chinensis_X2	-----VCPGMDIRNNLTRL-----RELENCVIEGHLQILLMFKTRPEDF
Homo_sapiens_X1	-----VCPGMDIRNNLTRL-----HELENCVIEGHLQILLMFKTRPEDF
Pongo_abelii_2	-----VCPGMDIRNNLTRL-----HELENCVIEGHLQILLMFKTRPEDF
Pan_troglodytes_X2	-----VCPGMDIRNNLTRL-----HELENCVIEGHLQILLMFKTRPEDF
Boleophthalmus_pectinirostris	-----ICSSKDIRNNVTNL-----QVLENCIIIEGHLKILLMFRTKAEDNF
Larimichthys_crocea_X2	-----VCPSKDIRNNVTNL-----QTLENCTVIEGHLKILLMFRTKPEDF
Larimichthys_crocea	-----VCPSKDIRNNVTNL-----QTLENCTVIEGHLKILLMFRTKPEDF
Lates_calcarifer	-----VCPSKDIRNNVTNL-----QTLENCTVIEGHLKILLMFRTKPEDF
Seriola_lalandi_dorsalis	-----ICPNKDIRNNVTNL-----QSLNCTVIEGHLKILLMFRTKPEDF
Seriola_dumerili	-----ICPNKDIRNNVTNL-----QSLNCTVIEGHLKILLMFRTKPEDF
Zootermopsis_nevadensis	-----ICVSDIRNSVREF-----EQLRGCTVVEGFVRIVLIDRANESDF
Parasteatoda_tepidarium	-----VCRSIDIRNKVENF-----KKLENCTVIEGSLQILLIDHGKAQDY
Onthophagus_nigriventris	-----ICKSVDIRNSGEMF-----ENLRGCRVVEGFVQILLIDHAKESDTF
Nicrophorus_vespilloides	-NTSG-----ICKSIDVRNSMQAL-----LNLRGCRVVEGFVQISLSDAEDTEF
Tribolium_castaneum	-----FCEVDIRNTLDSF-----NRLKGCHVVEGFVQILLFDNVNETEL
Nilaparvata_lugens	-----VCQSLDIRNAAREF-----HQLQGCQVVEGFVQIVLMDKAVESEF
Blattella_germanica	-----VCPSIDIRNRVEAF-----KRLNGCKVVEGFVQILLIDNAESESF
Nasonia_vitripennis_X1	-HASGR-----VCQSIDIRNKLSEF-----SKLDGCRVVEGFVQILLLENTNEAHF
Microplitis_demolitor	-----VCQSIDIRNSVTQF-----SRLKGCRLVVEGFVQILLIDHADDAYS
Neodiprion_lecontei	-KRT-----VCQSVDIRNSVNQF-----SRLEGCRVVEGFVQILLIDHANDTSY
Athalia_rosae	-----VCQSVDIRNSVHQF-----SRLEGCRVVEGFVQILLIDHADDSHY
Orussus_abietinus	-ANTFNKT-----VCQSVDIRNNVNQF-----SRLDGCRLVVEGFVQILLIDNADDQSY
Dufourea_novaeangliae	-----VCQSIDVRNSVSSF-----SKLNGCRVVEGFVQILLIDHADDSEF
Megachile_rotundata_X1	-----VCQSIDIRNVVHHF-----SRLKGCRLVVEGFVQILLIDNAEPSEF
Melipona_quadrfasciata	-----LHAVKHARRYVIGFRAAWTAATLSGCRVVEGFVQILLIDNAEPAEF
Apis_mellifera_X1	-----VCQSIDIRNTVRQF-----SRLKGCRLVVEGFVQILLIDNAEPSEY
Eufriesea_mexicana_1	-----VCQSIDIRNSVRHF-----SRLKGCRLVQGFVQILLIDNAEPSEY
Eufriesea_mexicana_2	-----VCQSIDIRNSVRHF-----SRLKGCRLVQGFVQILLIDNAEPSEY
Bombus_terrestris	-----VCQSIDIRNSVRYF-----SRLKGCRLVVEGFVQILLIDNAEPSEY
Bombus_impatiens	-----VCQSIDIRNSVRYF-----SRLKGCRLVVEGFVQILLIDNAEPSEY
Polistes_dominula_X1	-KKDG-----VCQSIDIRNSVNQF-----SRLQGCRLVVEGFVQILLIDHADDASF
Cephus_cinctus_X1	-----VCQSVDIRNSVSEF-----SRLEGCRVVEGFVQILLIDRADDLAY
Dinoponera_quadriciceps_X2	-KKGG-----VCQSIDIRNSVDQF-----SRLEGCRVVEGFVQILLIDKANQASY
Harpegnathos_saltator_X1	-IKDG-----VCQSIDIRNSVDQF-----SRLEGCRVVEGFVQILLIDRANHTAY
Linepithema_humile_X2	-NTDG-----VCQSIDIRNSVNEL-----SKLEGCRVVEGFVQILLIDRAEPSNY
Linepithema_humile_X1	-NTDG-----VCQSIDIRNSVNEL-----SKLEGCRVVEGFVQILLIDRAEPSNY
Ooceraea_biroi	-RKNG-----VCQSIDIRNNVNQF-----SKLEGCRVVEGFVQILLIDRAEQSAY
Camponotus_floridanus	-----VCQSIDIRNSVDQF-----LRLNGCRVVEGFVQILLIDRAEQSAY
Solenopsis_invicta	-NK-----VCQSIDIRNNVNEF-----SKLKGCVVEGFVQISLIDRAEPLDY
Pogonomyrmex_barbatus_X1	-GI-----VCESIDIRNSVDQFH-----PKLNCRVVEGFVQILLIDRAEPSDF
Vollenhovia_emeryi_X1	-NRDG-----VCQSIDIRNSVSQF-----SKLEGCRVVEGFVQILLIDRAEQSAY
Wasmannia_auropunctata	-NKDG-----VCQSIDIRNSVSQF-----SKLEGCRVVEGFVQILLIDRAEQSAY
Cyphomyrmex_costatus	-----VCQSIDIRNSVSDF-----SKLEGCRVVEGFVQILLIDRAEQSAY
Trachymyrmex_septentrionalis	-----VCQSIDIRNSVSEF-----SKLEGCRVVEGFVQILLIDRAEQSAY
Atta_colombica	-----VCQSIDIRNSVSEF-----SKLEGCRVVEGFVQILLIDRAEQSAY
Trachymyrmex_cornetzi	-GRNLICIVNVSSVAVCQSIDIRNSVSEF-----SKLEGCRVVEGFVQILLIDRAEQSAY
Acromyrmex_echinator	-----VCQSIDIRNSVSEF-----SKLEGCRVVEGFVQILLIDRAEQSAY
Atta_cephalotes	-----VCQSIDIRNSVSEF-----SKLEGCRVVEGFVQILLIDRAEQSAY

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Drosophila_melanogaster	LNRSFPKLTEVTDYIIIIY-----RVGTGLHLSLSKIFPNLSVIRG
Halyomorpha_halys	ANLSFPKLSEVTSYVIFY-----RVHGLTSIGKLFPNLTIIGG
Rhodnius_prolixus	DNMTFPELREITSFLMVN-----KVSGLRSLGRLFPNLSIIRG
Cimex_lectularius_X1	ENVTFPDLREVTEYVLFY-----QVNGLTSLGEVFPNLAVIRG
C_lectularius_X2	ENVTFPDLREVTEYVLFY-----QVNGLTSLGEVFPNLAVIRG
Cryptotermes_secundus	YRFSFPELREITDYLLVY-----RVAGLTSIGKLFPNLTVIRG
Miniopterus_natalensis	RDLSFPNLIMITDYLLLF-----RVYGLESKDLFPNLTIVIRG
Callithrix_jacchus	RDLSFPFKLIMITDYLLLF-----RVYGLESKDLFPNLTIVIRG
Heterocephalus_glaber_X1	RDLSFPFKLIMITDYLLLF-----RVYGLESKDLFPNLTIVIRG
Dasypus_novemcinctus	RDLSFPFKLIMITDYLLLF-----RVYGLESKDLFPNLTIVIRG
Tupaia_chinensis_X2	RDLSFPFKLIMITDYLLLF-----RVYGLESKDLFPNLTIVIRG
Homo_sapiens_X1	RDLSFPFKLIMITDYLLLF-----RVYGLESKDLFPNLTIVIRG
Pongo_abelii_2	RDLSFPFKLIMITDYLLLF-----RVYGLESKDLFPNLTIVIRG
Pan_troglodytes_X2	RDLSFPFKLIMITDYLLLF-----RVYGLESKDLFPNLTIVIRG

Boleophthalmus_pectinirostris	RGVSFPKLTVITDYLLMF-----RVYGLESLSDFPNLTLIRG
Larimichthys_crocea_X2	RGLSFPKLIVVTDYLLLF-----RVYGLESLSDFPNLTVIRG
Larimichthys_crocea	RGLSFPKLIVVTDYLLLF-----RVYGLESLSDFPNLTVIRG
Lates_calcarifer	RGLSFPKLTVVTDYLLLF-----RVYGLESLSDFPNLTVIRG
Seriola_lalandi_dorsalis	RGLSFPKLRVVTDYLLLF-----RVYGLESLSDFPNLTVIRG
Seriola_dumerili	RGLSFPKLRVVTDYLLLF-----RVYGLESLSDFPNLTVIRG
Zootermopsis_nevadensis	ENVTFPELREITCYLMLY-----RVVGLKNLGFLEPNLAVIRG
Parasteatoda_tepidarium	DYLSFPNLVEITDYLLVY-----RAFGLNSLGKLFPNLAVIRG
Onthophagus_nigriiventris	ENISFPELREITGHLLLY-----RVNGLTSLGKLFPNLAVIRG
Nicrophorus_vespilloides	EGISFPELTEITDFLLLY-----RVHGLRSVQGLFPNLAVIRG
Tribolium_castaneum	SLLSFPNLTEITDYLLLY-----RVNGLRSIGQLFPNLSVIRG
Nilaparvata_lugens	ANFSFPELREITGYLLLY-----RIDGLRTLNLFPNLAVIRG
Blattella_germanica	ANLFPPELREITDYLLLY-----RVNGLRSIGSLFPNLTVIRG
Nasonia_vitripennis_X1	ENMSYPDLVEITGYFMVY-----RVQQLQSLGHLFPNLAVIRG
Microplitis_demolitor	TNLTFPDLVEITGYLLLY-----RVNGLRSVQGLFPNLTVIRG
Neodiprion_lectei	ANLTFPDLVEITGYLLLY-----RVNGLRSVGHLPNLTVIRG
Athalia_rosae	ANLTFPDLVEITGYLLLY-----RVNGLRSVGHLPNLTVIRG
Orussus_abietinus	ANLTFPNLVEITGYLLLY-----RVYGLQSLGHLFPNLAVIRG
Dufourea_novaeangliae	ANITFPELREITGYLLFY-----RVKGLRSVGRLPNLTVIRG
Megachile_rotundata_X1	VNISFPELREITGYLLLY-----RVKGLRSIGRLFPNLTVIRG
Melipona_quadrfasciata	ANISFPELKEITGYLLFY-----RVKGLRSIGRLFPNLSVIRG
Apis_mellifera_X1	TNISFPELREITGYLLLYSRLPLPLSFTALPSLSVSVLRVKGRLSIGRLFPNLTVIRG
Eufriesea_mexicana_1	ANVSFPELKEITGYLLLY-----RVKGLRSIGRLFPNLTVIRG
Eufriesea_mexicana_2	ANVSFPELKEITGYLLLY-----RVKGLRSIGRLFPNLTVIRG
Bombus_terrestris	ANISFPELKEITGYLLLY-----RVKGLRSIGRLFPNLTVIRG
Bombus_impatiens	ANISFPELKEITGYLLLY-----RVKGLRSIGRLFPNLTVIRG
Polistes_dominula_X1	ANLTFPDLVEITEYLILY-----RVNGLRSVGRLPNLTVIRG
Cephus_cinctus_X1	ANLTFPDLVEITGYLVLY-----RVNGLKSVGHLFPNLTVIRG
Dinoponera_quadricaps_X2	ANISFPELVEITGYLILF-----RVNGLRSIGHLFPNLTVIRG
Harpegnathos_saltator_X1	ANISFPQLVEITGYLILY-----RVSGRLSIGHLFPNLTVIRG
Linepithema_humile_X2	TDHVYPPELVEITGYLILY-----RVNGLRSIGHLFPNLTVIRG
Linepithema_humile_X1	TDHVYPPELVEITGYLILY-----RVNGLRSIGHLFPNLTVIRG
Ooceraea_biroi	ANLSFPDLVEITGYLVLY-----RVSGRLSVGRLPNLTVIRG
Camponotus_floridanus	ANLSFPDLVEITGYLILY-----RVSGRLSIGRLFPNLTVIRG
Solenopsis_invicta	ANFSFPELVEITDFLLLY-----RVNGLKTIQGLFPNLAVIRG
Pogonomyrmex_barbatus_X1	ANISFPKLVEITGYLILY-----RVSGRLSVGHLPNLTVIRG
Vollenhovia_emeryi_X1	ANLSFPDLVEITGYLILY-----RVNGLRAVGHLPNLTVIRG
Wasmannia_auropunctata	DNISFPELVEITGYLILF-----RVSGRLTVGHLPNLTVIRG
Cyphomyrmex_costatus	ANLSFPDLVEITGYLILY-----RVSGRLTVGHLPNLTVIRG
Trachymyrmex_septentrionalis	ANLSFPDLVEITGYLILY-----RVSGRLTVGHLPNLTVIRG
Atta_colombica	ANLSFPDLVEITGYLILY-----RVSGRLTVGHLPNLTVIRG
Trachymyrmex_cornetzi	ANLSFPDLVEITGYLILY-----RVSGRLTVGHLPNLTVIRG
Acromyrmex_echinator	ANLSFPPELVEITGYLILY-----RVSGRLTVGHLPNLTVIRG
Atta_cephalotes	ANLSFPDLVEITGYLILY-----RVSGRLTVGHLPNLTVIRG
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Drosophila_melanogaster	NK-LFDGYALVVYSNFDLMDLGLHKLRSITRGVRIEKNHKLCDRTIDWLEIL--AENE
Halyomorpha_halys	DL-LSVDYALIIITQMPHLKEIDLPELRLILRGSAIFKNPKLCYVDTVDWDLIA---TT
Rhodnius_prolixus	ER-LFLDYALVITNMQNLEIALTSVT-ILRGSAIAWNNKKLCYAETIDWDQIA--PGG-
Cimex_lectularius_X1	EK-LFLDYSFIVFQMPDLKTLKFSFI-ILRGSVVIANNNKLCYDNTIDWDKVA--VSGV
C. lectularius_X2	EK-LFLDYSFIVFQMPDLKTLKFSFI-ILRGSVVIANNNKLCYDNTIDWDKVA--VSGV
Cryptotermes_secundus	NS-LFVDYALVVYEMFQQLQEIQLRSLTAVLRGSRVFDKNPELCYVDTVDWRSIL--RN--
Miniopterus_natalensis	SR-LFFNYALVIFEMVHLKELGLYSLMNITRGSVRIEKNNELCYLATIDWSRIL--DSVE
Callithrix_jacchus	SR-LFFNYALVIFEMVHLKELGLYSLMNITRGSVRIEKNNELCYLATIDWSRIL--DSVE
Heterocephalus_glaber_X1	SR-LFFNYALVIFEMVHLKELGLYSLMNITRGSVRIEKNNELCYLATIDWSRIL--DSVE
Dasypus_novemcinctus	SR-LFFNYALVIFEMVHLKELGLYSLMNITRGSVRIEKNNELCYLATIDWSRIL--DSVE
Tupaia_chinensis_X2	SR-LFFNYALVIFEMVHLKELGLYNLMNITRGSVRIEKNNELCYLATIDWSRIL--DSVE
Homo_sapiens_X1	SR-LFFNYALVIFEMVHLKELGLYNLMNITRGSVRIEKNNELCYLATIDWSRIL--DSVE
Pongo_abelii_2	SR-LFFNYALVIFEMVHLKELGLYNLMNITRGSVRIEKNNELCYLATIDWSRIL--DSVE
Pan_troglodytes_X2	SR-LFFNYALVIFEMVHLKELGLYNLMNITRGSVRIEKNNELCYLATIDWSRIL--DSVE
Boleophthalmus_pectinirostris	SN-LFFNYALVIFEMVHLKELGLHSLMNITRGAVRIEKNPDLCYSLTLDWSKIL--DSVA
Larimichthys_crocea_X2	NN-LFFNYALVMFEMQLQREIGLHSLMNITRGAVRIEKNPDLCYSLTLDWSKIL--DSVE
Larimichthys_crocea	NN-LFFNYALVMFEMQLQREIGLHSLMNITRGAVRIEKNPDLCYSLTLDWSKIL--DSVE
Lates_calcarifer	NN-LFFNYALVMFEMQLQREIGLHSLMNITRGAVRIEKNPDLCYSLTLDWSKIL--DSVE
Seriola_lalandi_dorsalis	NN-LFFNYALVMFEMQLQREIGLHSLMNITRGAVRIEKNPDLCYSLTLDWSKIL--DSVE
Seriola_dumerili	NN-LFFNYALVMFEMQLQREIGLHSLMNITRGAVRIEKNPDLCYSLTLDWSKIL--DSVE
Zootermopsis_nevadensis	NT-LFQDYALVVYEMVQLQELGLWGLAAILRGSVRIEKNYALCYNTVNWDAVT--NG--
Parasteatoda_tepidarium	NE-LFHNALVVFELQIQEIQLSNLTDILRGSVRIEKNPGLCYVETIEWDLIA--KEGK
Onthophagus_nigriiventris	QQPLLLGLYALIFEMPSLQEIQLGLSLTDMNGGIRIDKNPDLCFANTIDWNSKIL--HE-K
Nicrophorus_vespilloides	QD-TVLGYSFIIYELSGIQEVGLYSLTDIQAQGLIRIDKNPELCFVNSIDWDKIA--HE-K
Tribolium_castaneum	RS-TFYTYSFVVFEMSSIQEIQLGLSLTDITRGLIRIDKNPSLCFVNSIDWEAIA--HE-K

Nilaparvata_lugens	NT-LFFNYALVVFEMHLQEMGLKSLTDIVRGAVHISKNPMLCYVDTIDWDKIA--RSSQ
Blattella_germanica	ET-LFLNYALVAFEMIHLQEIGLYSLTDILRGSVRFEKNPPLLCFVDTVEWDLIA--KKGR
Nasonia_vitripennis_X1	HS-LFMNYAFVAFEMTSLQEIGLASLTDIMRGSVRFEKNPVLKYANTVDWDLIA--HAGK
Microplitis_demolitor	HS-LFINYALVAFEMMNLQEVGLYSLTDILRGSVRFEKNPMLCYVDTVWDIIA--KAGN
Neodiprion_lecontei	HS-LFINYALVAFEMMHLQEIGLHSLTNIGRGSVRFEKNPALCYVDTIDWDLII--GVGK
Athalia_rosae	HS-LFINYALVAFEMVHLQEIGLHSLTNIVRGTVRFEKNPALCYVDTIDWDLIT--GVGK
Orussus_abietinus	HS-LFFNYALVVFEMMHLQEIGLYSLTDILRGSVRFEKNPVLGNADTIDWDLIA--KAGK
Dufourea_novaeangliae	HS-LFINYALVAFEMMSLQEIGLHSLTTIVRGSVRFEKNHALCYVDTIDWDLIG--KAGK
Megachile_rotundata_X1	HS-LFINYALVAFEMMNLQEIGLHSLTTIVRGSVRFEKNPALCYVDTIDWDLIA--KAGK
Melipona_quadrifasciata	HS-LFINYALVVFEMMSLQEVGLHSLTTVVVRSVRFEKNPALCYVDTIDWDLIA--KSGK
Apis_mellifera_X1	HS-LFINYALVAFEMMNLQEIGLHSLTTIVRGSVRFEKNPALCYVDTIDWDLIA--KAGK
Eufriesea_mexicana_1	HS-LFINYALVAFEMMNLQEIGLHSLTTIVRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Eufriesea_mexicana_2	HS-LFINYALVAFEMMNLQEIGLHSLTTIVRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Bombus_terrestris	HS-LFINYALVAFEMMNLQEIGLHSLTTIVRGSVRFEKNPALCYVDTIDWDLIA--KAGK
Bombus_impatiens	HS-LFINYALVAFEMMNLQEIGLHSLTTIVRGSVRFEKNPALCYVDTIDWDLIA--KAGK
Polistes_dominula_X1	HS-LFINYALVAFEMMHLQEIGLHSLTDILRGSVRFEKNPALCYVDTIDWDLIA--KAGK
Cephus_cinctus_X1	HS-LFINYALVAFEMMHLQEIGLHSLTDILRGSVRFEKNPALCYVDTIDWDLIA--KAGK
Dinoponera_quadriceps_X2	HS-LFVNYALVAFEMMQLQEIGLHSLTTILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Harpegnathos_saltator_X1	RS-LFTNYALVAFEMMQLQEIGLHSLTTIQRGSVRFEKNPVLKYANTVDWDLIA--RAGK
Linepithema_humile_X2	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Linepithema_humile_X1	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Ooceraea_biroi	HS-LFINYALVAFEMMHLQELGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Camponotus_floridanus	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Solenopsis_invicta	NS-LIMNYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGN
Pogonomyrmex_barbatus_X1	NS-LFINYALVAFEMMNLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Vollenhovia_emeryi_X1	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Wasmannia_auropunctata	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Cyphomyrmex_costatus	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Trachymyrmex_septentrionalis	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Atta_colombica	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Trachymyrmex_cornetzi	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Acromyrmex_echinator	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
Atta_cephalotes	HS-LFINYALVAFEMMHLQEIGLHSLTNILRGSVRFEKNPVLKYANTVDWDLIA--KAGK
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Drosophila_melanogaster	TQLVVLTEGKEKECR-LS-----KCPGEIRIEEGHNTAIEGELNASC
Halyomorpha_halys	GSNFIVPAKDR---S--MCPGCG-----YCPP-----
Rhodnius_prolixus	-DHFLVGNPITD-P-----ECPG-----
Cimex_lectularius_X1	REYLFPPNDEKTN--C-----SCPS-----
C. lectularius_X2	REYLFPPNDEKTN--C-----SCPS-----
Cryptotermes_secundus	GEHFAASNKEVPL-CP-----SCPA-----
Miniopterus_natalensis	DNYIVLNKDDNNE-CGDICPGTAGKGT-----NCPA-----TVI
Callithrix_jacchus	DNYIVLNKDDNNE-CGDICPGTAGKGT-----NCPA-----TVI
Heterocephalus_glaber_X1	DNYIVLNKDDNNE-CGDICPGTAGKGT-----NCPA-----TVI
Dasypus_novemcinctus	DNYIVLNKDDNNE-CGDICPGTAGKGT-----NCPA-----TVI
Tupaia_chinensis_X2	DNYIVLNKDDNNE-CGDICPGTAGKGT-----SCPA-----TVI
Homo_sapiens_X1	DNYIVLNKDDNNE-CGDICPGTAGKGT-----NCPA-----TVI
Pongo_abelii_2	DNYIVLNKDDNNE-CGDICPGTAGKGT-----NCPA-----TVI
Pan_troglodytes_X2	DNYIVLNKDDNNE-CGDICPGTAGKGT-----NCPA-----TVI
Boleophthalmus_pectinirostris	DNYIVFNKNERE--CGDVCPGAAVGKT-----TCQT-----TTI
Larimichthys_crocea_X2	DNYIVANKNDRE--CGDVCPGAAVGKT-----TCQT-----TTI
Larimichthys_crocea	DNYIVANKNDRE--CGDVCPGAAVGKT-----TCQT-----TTI
Lates_calcarifer	DNYIMANKNDRE--CGDVCPGAAVGKT-----TCQT-----TTI
Seriola_lalandi_dorsalis	DNYIMANKNDRE--CGDVCPGAAVGKT-----TCQT-----TTI
Seriola_dumerili	DNYIMANKNDRE--CGDVCPGAAVGKT-----TCQT-----TTI
Zootermopsis_nevadensis	GEHVIALNKDSAS-CP--GQG-----MCDV-----
Parasteatoda_tepidariorum	GGHFILKGNKKSAD-CPNTPCPGPPT-----VCPK-----
Onthophagus_nigriventris	AELFIRSSKKENE-CP-----MCP-----RMD
Nicrophorus_vespilloides	GEHYIKNIKAENE-CP-LCPGEDEESS--LCPA-----SKN
Tribolium_castaneum	GEHFILKLNKSPNE-CP-ICPGDEKEDESGNSVAHIHCHK-----APHRSDSE
Nilaparvata_lugens	GGHFITGNKKKNE-CP-ICQTNA-----VCPT-----
Blattella_germanica	GEHFITGNKRSNPE-CP-MCANDLM-----HC-----R--
Nasonia_vitripennis_X1	GGNVISSNRPKNE-CP-VCEK-----DCPR-----R--
Microplitis_demolitor	GEHVIADNKLKLN-CP-VCEK-----HCPL-----R--
Neodiprion_lecontei	GEHVISGNKPRNG-CP-VCEK-----HCPT-----R--
Athalia_rosae	GEHVISGNKPKNG-CP-VCEK-----NCPT-----R--
Orussus_abietinus	GEHVISSNKPKNV-CP-VCEK-----HCPT-----R--
Dufourea_novaeangliae	GEHVIAGNNPKNG-CP-VCEK-----HCPQ-----R--
Megachile_rotundata_X1	GENVISGNPKNG-CP-VCEK-----HCPQ-----S--
Melipona_quadrifasciata	GEHIIVGNNPRNG-CP-VCEK-----HCPQ-----R--
Apis_mellifera_X1	GEHVISGNPKNA-CP-VCEK-----HCPQ-----R--

Eufriesea_mexicana_1	GEHVIAANNRKNNG-CP-VCEK-----RCPQ-----R--
Eufriesea_mexicana_2	GEHVIAANNRKNNG-CP-VCEK-----RCPQ-----R--
Bombus_terrestris	GEHVIAAGNNPRNG-CP-VCEK-----HCPQ-----R--
Bombus_impatiens	GEHVIAAGNNPRNG-CP-VCEK-----HCPQ-----R--
Polistes_dominula_X1	GEHVISGNKPKND-CP-ICEK-----NCTT-----RLI
Cephus_cinctus_X1	GEHVISGNKPKNG-CP-VCEK-----NCPD-----R--
Dinoponera_quadricaps_X2	GEYVISGNKLTNG-CP-MCEK-----SCPE-----K--
Harpegnathos_saltator_X1	GENVILGNKLTNG-CP-VCEK-----SCPE-----K--
Linepithema_humile_X2	GEHVISGNKPTNG-CP-ICDR-----NCPK-----K--
Linepithema_humile_X1	GEHVISGNKPTNG-CP-ICDR-----NCPK-----K--
Ooceraea_biroi	GEHVISGNKLTNG-CP-VCDK-----KCPA-----R--
Camponotus_floridanus	GEHVISGNKLTNG-CP-VCDK-----SCPS-----R--
Solenopsis_invicta	GEHFIKDNKPSNG-CP-MCPR-----KCPT-----R--
Pogonomyrmex_barbatus_X1	GGHVIMDNKPTNG-CP-VCDK-----KCPT-----R--
Vollenhovia_emoryi_X1	GGHFIKDNKPMNG-CP-MCDK-----RCPT-----R--
Wasmannia_auropunctata	GGHVIMDNKPTNG-CP-VCDKFL-----RCPI-----R--
Cyphomyrmex_costatus	GGHFIKDNKPTNG-CP-VCDK-----KCPT-----R--
Trachymyrmex_septentrionalis	GGHFIKDNKPTNG-CP-VCDK-----KCPT-----R--
Atta_colombica	GGHFIKDNKPTNG-CP-VCDK-----KCPT-----R--
Trachymyrmex_cornetzi	GGHFIKDNKPTNG-CP-VCDK-----KCPT-----R--
Acromyrmex_echinator	GGHFIKDNKPTNG-CP-VCDK-----KCPT-----R--
Atta_cephalotes	GGHFIKDNKPTNG-CP-VCDK-----KCPT-----R--

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Drosophila_melanogaster	QLHNNRRLCWNKLCQTKC----PEKCR--NNCIDEHT-----CCSQDCLGGCVIDKN
Halyomorpha_halys	-----RGNCWSRSHCQVL-----EW-----GT---DCHSECLGGC--SGP
Rhodnius_prolixus	-CAKNNLWCWSRNCQ--VCVYFISIINLIPPSLREWVTPDGE---PCDDECVGGC--TGL
Cimex_lectularius_X1	---CSDGLCWSEKNCQL-----DLAES-----SCHQECVGGC--TGS
C._lectularius_X2	---CSDGLCWSEKNCQL-----DLAES-----SCHQECVGGC--TGS
Cryptotermes_secundus	--SCESANCWGPGVCHSLR-----KN--ET---NCHRLCLGGC--TGL
Miniopterus_natalensis	NGQFVER-CWTHSHCQKVC----PTSCK--SHGCT-AE--GL---CCHSECLGNC--SEP
Callithrix_jacchus	NGQFVER-CWTHSHCQKVC----PTICK--SHGCT-AE--GL---CCHSECLGNC--SEP
Heterocephalus_glaber_X1	NGQFIER-CWTHSHCQKVC----PTMCK--SHGCT-TE--GL---CCHSECLGNC--SEP
Dasypus_noveboracensis	NGQFVER-CWTHSHCQKVC----PTVCK--SHGCT-AE--GL---CCHSECLGNC--SAP
Tupaia_chinensis_X2	NGQFVER-CWTHSHCQKVC----PTICK--SHGCT-AE--GL---CCHSECLGNC--SEP
Homo_sapiens_X1	NGQFVER-CWTHSHCQKVC----PTICK--SHGCT-AE--GL---CCHSECLGNC--SQP
Pongo_abelii_2	NGQFVER-CWTHSHCQKVC----PTICK--SHGCT-AE--GL---CCHSECLGNC--SEP
Pan_troglodytes_X2	NGQFVER-CWTHSHCQKVC----PTICK--SHGCT-AE--GL---CCHSECLGNC--SQP
Boleophthalmus_pectinirostris	NGLFNER-CWNQKHCQKVC----PAHCK--HRACT-KD--GQ---CCHQCLGGC--SKP
Larimichthys_crocea_X2	NGHFVER-CWTQNHCHCQKVC----PVQCK--HRACT-KD--DQ---CCHQCLGGC--LKP
Larimichthys_crocea	NGHFVER-CWTQNHCHCQKVC----PVQCK--HRACT-KD--DQ---CCHQCLGGC--LKP
Lates_calcarifer	NGHFVER-CWTQNHCHCQKVC----PVQCK--HRACT-KD--DQ---CCHQCLGGC--LKP
Seriola_lalandi_dorsalis	NGHFVER-CWTQNHCHCQKVC----PVQCK--HRACT-KE--DQ---CCHQCLGGC--LKP
Seriola_dumerili	NGHFVER-CWTQNHCHCQKVC----PVQCK--HRACT-KE--DQ---CCHQCLGGC--LKP
Zootermopsis_nevadensis	AEGCNKTMCGWGS-----THNCH--HRRRL-QS-----EHELCLGGC--SGP
Parasteatoda_tepidariorum	STEKPTYLWCWNSQKQKIS-PCIKKECDLQNSSCY-NS--TH---CCHPECLGGC--TGP
Onthophagus_nigritiventris	NGKPLCEYCWSSKHCQKVC----KSNCT----SCN-DL--GE---CCNNTCIGGC--SNN
Nicrophorus_vespilloides	KNIGMIFLWCWNRVHCQKVC----PSSCK---TTCD-AK--GK---CCHPSCLGGC--RED
Tribolium_castaneum	NFDRDVLHCWNRQHCQKIC----PTKCK--H--SCN-AN--LE---CCDESLGGC--SIN
Nilaparvata_lugens	-SATNDNLWCWNIQHCQKFC----SKCEE-GTACM-DD--GT---CCDKNCLGGC--NGT
Blattella_germanica	NASSTKPLCWNLTCKQKIC----PTECG--SRST-DS--GM---CCHCLCLGGC--TGP
Nasonia_vitripennis_X1	PTNLDERLWCWNRQHCQKVC----DRKCE--NNACD-IA--GK---CCHPSCLGGC--TGP
Microplitis_demolitor	LTKLDNLWCWNRQHCQKIC----KCG--NGACN-PS--GE---CCNPLCLGGC--TGQ
Neodiprion_lecontei	STKKDETLCWNRQHCQKVC----DKSCG--ISACN-NSMPGK---CCHSSCLGGC--TGT
Athalia_rosae	VTQDETLCWNRQHCQKVC----NTNCG--DAACS-NTVPVK---CCHPTCLGGC--TGP
Orussus_abietinus	LTKPDETLCWNRQHCQKIC----DRKCG--DKVCS-KT--NE---CCHPSCLGGC--TGP
Dufourea_novaeangliae	SPKSQETLCWNRQHCQKIC----ERKCE--NNACD-IA--GK---CCHPSCLGGC--TGP
Megachile_rotundata_X1	STNPDEFWCWNRQHCQKIC----DGKCE--NNACD-DT--GK---CCHKSLGGC--TGP
Melipona_quadrfasciata	QTKSDEYLCWNRQHCQKIC----DQKCE--SDACD-EF--GG---CCHPSCLGGC--TGP
Apis_mellifera_X1	LTKQDEYLCWNRQHCQKIC----DRKCE--NNACD-EA--GN---CCHSSCLGGC--SGP
Eufriesea_mexicana_1	STKSDEYLCWNRQHCQKIC----DRKCE--NNACY-ESELER---CCHPSCLGGC--TGP
Eufriesea_mexicana_2	STKSDEYLCWNRQHCQKIC----DRKCE--NNACY-ESELER---CCHPSCLGGC--TGP
Bombus_terrestris	QTKSDEYLCWNRQHCQKIC----DRKCE--NNACD-ES--GT---CCHPSCLGGC--TGP
Bombus_impatiens	QTKSDEYLCWNRQHCQKIC----DRKCE--NNACD-ES--GT---CCHPSCLGGC--TGP
Polistes_dominula_X1	SNKPDETLCWNRQHCQKIC----D-RCL--EGACD-AS--GT---CCHPSCLGGC--TGR
Cephus_cinctus_X1	LTKPDETLCWNRQHCQKIC----DSKCG--DYACS-DS--GT---CCHPSCLGGC--TGL
Dinoponera_quadricaps_X2	QTKLGETMCWNRQHCQKIC----D-KCG--DGACD-NT--GA---CCHPSCLGGC--NGP
Harpegnathos_saltator_X1	QTKPDETMCWNRQHCQKIC----D-KCG--DNACD-DT--GA---CCHSSCLGGC--TGP
Linepithema_humile_X2	QTKRDETLCWNRQHCQKIC----DPKCG--DGACD-DT--GA---CCHPSCLGGC--TGP
Linepithema_humile_X1	QTKRDETLCWNRQHCQKIC----DPKCG--DGACD-DT--GA---CCHSSCLGGC--TGP
Ooceraea_biroi	QTKPDETLCWNRQHCQKIC----DRKCE--DCACD-DG--GR---NCHRSCLGGC--TGL

Camponotus_floridanus	QTKPDETLCWNRQHCQRVC----
Solenopsis_invicta	QTKPDQNLWCWNQHCQRIC----DRKCE--DRACN-ST--GQ---CCHPFCLGGC--TGP
Pogonomyrmex_barbatus_X1	QMKHDQTLWCWNRHHQCRIC----Q-DCG--DRACN-DK--GE---CCHPSCLGGC--TGS
Vollenhovia_emeryi_X1	QTKPDQTLWCWNSHNCQQIC----DRTCE--NRACN-KT--GE---CCHQSCCLGGC--TGS
Wasmannia_auropunctata	QTKPDQTLWCWNRTHCQQIC----Q-KCE--DGACN-NK--GE---CCHASCLGGC--TEV
Cyphomyrmex_costatus	QTKPDQTLWCWNRQHCQQIC----NWKCE--NRGCS-NT--GE---CCHPFCLGGC--TGP
Trachymyrmex_septentrionalis	QTKPDQSLCWNRQHCQQIC----DWKCD--NRACN-ST--GE---CCHPFCLGGC--TGP
Atta_colombica	QTKFDQSLCWNRQHCQQIC----DWKCE--NRACN-ST--GE---CCHPFCLGGC--TGP
Trachymyrmex_cornetzi	QTKPDQTLWCWNRQHCQQIC----DWKCE--NRACN-ST--GE---CCHPFCLGGC--TGS
Acromyrmex_echinatior	QTKLDQSLCWNRQYQCQIC----DWKCE--NRACN-ST--GV---CCHPFCLGGC--SGL
Atta_cephalotes	QTKFDQSLCWNRQHCQQIC----DWKCE--NRACN-ST--GE---CCHPFCLGGC--TGP

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Drosophila_melanogaster	-GNESCISCRNVSF-----NNICMDSCPKGYQF-DSRCVTANECITLTKF-----ET
Halyomorpha_halys	-SPKECTACKNFH-----GNKCVSSCPFFTYEFETKRCVTKDECLAMNNTLLRPGK-TE
Rhodnius_prolixus	-GPNYCKACRRFDH-----DGGCMKSCSPNRYAFENHYCVTEEEECQD-----DV
Cimex_lectularius_X1	-GPSNCVSCRHLFYF-----RGKCVPECPPDGYYSFNSRHCISKEDCINSSSTYHKMRR-ND
C_lectularius_X2	-GPSNCVSCRHLFYF-----RGKCVPECPPDGYYSFNSRHCISKEDCINSSSTYHKMRR-ND
Cryptotermes_secundus	-GSDQCSACTSVVD----EHGVCVDSCTDRFEFVGRCVTEEECRNSTVPPPPYLQRLD
Miniopterus_natalensis	NDPTKCAACRHFYL-----DGRCVETCPPYYHFQDWRCVNFSCQDLHNCKNSRR---
Callithrix_jacchus	GDPTKCVACRNYL-----DGRCVDSCTPPYYQFQDWRCVNFSCQDLHYCKNSQR---
Heterocephalus_glaber_X1	DDPTKCVACRNFYL-----DGRCVASCTPPYYHFQDWRCVNFSCQDLHNCKNSRR---
Dasypus_novemcinctus	DDPTKCMACRNFYL-----DGRCVETCPPYYQFQDWRCVNFSCQDLHNCKNSRR---
Tupaia_chinensis_X2	NDPTKCAACRNFYL-----DGRCVETCPPYYHFQDWRCVNFSCQDLHNCKNSRR---
Homo_sapiens_X1	DDPTKCVACRNFYL-----DGRCVETCPPYYHFQDWRCVNFSCQDLHCKNSRR---
Pongo_abelii_2	DDPTKCVACRNFYL-----DGRCVETCPPYYHFQDWRCVNFSCQDLHCKNSRR---
Pan_troglodytes_X2	DDPTKCVACRNFYL-----DGRCVETCPPYYHFQDWRCVNFSCQDLHCKNSRR---
Boleophthalmus_pectinirostris	NSVHEKCVACRGLQH-----DNCVVERCPENHFTYKGWRCVSFAFCQDLHNCKREKERSK
Larimichthys_crocea_X2	NSASHCVACRGLQH-----DNCVVERCPENHFTYKGWRCVSFAFCQDLHNCKREKERSK
Larimichthys_crocea	NSASHCVACRGLQH-----DNCVVERCPENHFTYKGWRCVSFAFCQDLHNCKREKERSK
Lates_calcarifer	SSAAHCVACRGLQH-----EGNCVERCPENHFTYKGWRCVSFAFCQDLHNGCKREKERSK
Seriola_lalandi_dorsalis	NSASHCVACRGLQH-----DNCVVERCPENHFTYKGWRCVSFAFCQDLHNCKREKERSK
Seriola_dumerili	NSASHCVACRGLQH-----EGNCVERCPENHFTYKGWRCVSFAFCQDLHNCKREKERSK
Zootermopsis_nevadensis	-RADQCYVCRGVNL-----DGNCIQKCPDRDRVSYLGRRCVTEDECRLNHSYMDAWTPEY
Parasteatoda_tepidiorum	-LSSDCTVCRHVVV-----EGKCMKKCPNNTYEFMNRRCVREDECNFSISHKSSG-GE
Onthophagus_nigriiventris	-DPKQCVACRNIIFYTEFNKTVCLDCKPEGLFKYLDRCVTEEEECNIPK--IEYT-VS
Nicrophorus_vespilloides	-NPRVCHVCRNFTM---GEDGTCTSYCPADRYEYLGRRCVTKKEECINTPRP--LRQYNTI
Tribolium_castaneum	-DTKLCTVCKNLSM-GFAGKQCMSSCPDYYQYLERRCILKNECKDMKRP--LNFQQQG
Nilaparvata_lugens	-GPTNCIACRGYLF-----QGTCVATCPVQTYQYLQRCVLEKECYDMPKP--REIMSEE
Blattella_germanica	-NSTDCACRDRVVF-----ENRCIKKCPNTHFKYLNRRRCVTEECRNITKP--REAN-YD
Nasonia_vitripennis_X1	-SNLECKVCRDVVV----NQNECVSSCPNGTYQFFNRRCTITKRECQMMRRP--REAP-AE
Microplitis_demolitor	-TASDCKICRDLVL----PDNCAKQCPHNMYEFLNRRCIDEHKCRKMRKP--LEAF-GN
Neodiprion_letecontei	-GSQDCAVCRDVIV----DGNRCANSCPENTYMFNRRCVQENECRKMMPK--REAF-DI
Athalia_rosae	-TSQDCVCRDVVV----AGNRCAEKCPENTYEFNRRCVQENECRKMMPK--REAF-DI
Orussus_abietinus	-DSNSCIACRELVL----PSNVCVPQCPGSGTYEYLNRRCVQADECRMRKP--REAS--M
Dufourea_novaeangliae	-TSRDCKVCKDVMT----ADRDRCDSNPATLEFMNYRCIEENMCMYMEKP--LEAF-NV
Megachile_rotundata_X1	-TNRDCAVCKDLVT----GNKECSEHCNPNGTLEFMDYRCIDEDTCLRTRKP--LESA-YN
Melipona_quadrifasciata	-TNRDCAACKDVIS----LDGQCVDRCPNGTLEFMNHRCIDEEQECRLMKP--REAA--N
Apis_mellifera_X1	-TNRDCTVCKDVVT----GDSECRERCNPNGSLEFMNHRCIDEARCLQMEKP--KEVL-KN
Eufriesea_mexicana_1	-TNRDCAVCKDLAT----DGFECEERCNPNGTLEFMNHRCIDERCLRMKP--REVF--Y
Eufriesea_mexicana_2	-TNRDCAVCKDLAT----DGFECEERCNPNGTLEFMNHRCIDERCLRMKP--REVF--Y
Bombus_terrestris	-TNRDCVCKDVVT----DNNECREQCPNGTLEFMNHRCINEERCLMQKP--REVF--N
Bombus_impatis	-TNRDCVCKDVVT----DNNECREQCPNGTLEFMNHRCINEERCLMQKP--REVF--N
Polistes_dominula_X1	-TANDCKVCKNVLI----GPNQCGERCPEGTYEFMNRRCIGEDECRRMVKP--REAL-SI
Cephus_cinctus_X1	-TAQNCTVCREMVF----DVNQCVKRCPIGTYEFMNRRCIQENECRTMPKP--KEAL-GT
Dinoponera_quadriceps_X2	-TARDCKVCKNVVA----NDECMDRCPSDTYEFMNRRCVIEQECRRLLKP--REAL-DS
Harpegnathos_saltator_X1	-TAKDCKVCRNLLV----NGECVDRCPNGTYEFMNRRCIGIEQECRQMRKP--REAL-DS
Linepithema_humile_X2	-TVNDICVCRNVVI----NGTECKDRCLNGTYEFMNRRCIGIEQECRRMPKP--REAS-DT
Linepithema_humile_X1	-TVNDICVCRNVVI----NGTECKDRCLNGTYEFMNRRCIGIEQECRRMPKP--REAS-DT
Ooceraea_biroi	-TARDICVCKGVII----DGHECKNRCPEGTYEFMNRRCIGIEQECRLMPKP--REAL-DT
Camponotus_floridanus	-SNANCTVCRNVV----GTECKDSCPNGTYEFMNRRCVIEQECRLMKP--REAL-DS
Solenopsis_invicta	-TANDCSVCRNVVI----NGKECKDRCPGKYEFMNRRCIEEWECRQMPKSMYKNED-EM
Pogonomyrmex_barbatus_X1	-TVNDICVCRNIIID----GEQCKDSCPNNTYVFMNRRCFTTKNCFEKKKP--QEAR-DT
Vollenhovia_emeryi_X1	-TANDCAVCRNVVV----TDKVCADHCPDGMYEFMNRRCIGIEKECRQLMKP--RETS-NM
Wasmannia_auropunctata	--TNCTVCRNVVLV----DGKCEDRCAPAGKLEFMNRRCIIEQECRLMKP--REAS-DA
Cyphomyrmex_costatus	-TANDICVCKNVVI----NDRECKDRCPKGKYEFMNRRCIEEQECRLMQKP--REAP-DA
Trachymyrmex_septentrionalis	-TANDICVCKNVII----NRECKDRCPIGKYEFMNRRCIEEQECRLMQKP--REAP-DA
Atta_colombica	-TANDCTVCKNVII----NKECKDRCPKGKYEFMNRRCIEEQECRLMQKP--REAP-DA
Trachymyrmex_cornetzi	-TANDCTVCKNVII----NKECKDRCPKGKYEFMNRRCIEEQECRLMQKP--REAP-DA
Acromyrmex_echinatior	-TANNCTVCKNVII----NRECKDRCPKGKYEFMNRRCIEEQECRLMQKP--REAP-DA
Atta_cephalotes	-TANDCTVCKNVII----NKECKDRCPKGKYEFMNRRCIEEQECRLMQKP--REAP-DA



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Drosophila_melanogaster	NSVYS---GIPY-NGQCITHCPTGYQKSENKRM-----CEPCPGGK-CDKEC-
Halyomorpha_halys	TKEN---WFWV-DSLVCNSCPRGLERD-KQLG-----CKKC-PGR-CVLHC-
Rhodnius_prolixus	VWSKPQE-WFWV-NGTCIQDCPTGLEKT-TMSS-----CERCKDGK-CKKEC-
Cimex_lectularius_X1	GAHLV---WFIW-GNSCVTECPKFEKTPDGKS-----CQRC-SGM-CKKVC-
C._lectularius_X2	GAHLV---WFIW-GNSCVTECPKFEKTPDGKS-----CQRC-SGM-CKKVC-
Cryptotermes_secundus	RAGLPNKAWIPF-NGTCSLTCPPQGYQTYTDSGG--KQL-----CEAC-VDH-CRKIC-
Miniopterus_natalensis	-PGCHQ---YVIH-NNKCIPECPSGY-TM-NSSN---LM-----CTPC-LGP-CPKVCH
Callithrix_jacchus	QSCYQ---YVIH-NNKCLPECPSGY-TM-NSSN---LM-----CTPC-LGP-CPKVCH
Heterocephalus_glaber_X1	-QGCHQ---YVIH-NDRCIPECPSGY-TM-NSSN---LM-----CTPC-LGP-CPKVCH
Dasypus_novemcinctus	-QGCHQ---YVIH-NNKCIPECPSGY-TM-NSSN---LM-----CTPC-LGP-CPKVCH
Tupaia_chinensis_X2	-QGCHQ---YVIH-NNKCIPECPSGY-TM-NSSN---LM-----CTPC-LGP-CPKVCH
Homo_sapiens_X1	-QGCHQ---YVIH-NNKCIPECPSGY-TM-NSSN---LL-----CTPC-LGP-CPKVCH
Pongo_abelii_2	-QGCHQ---YVIH-NNKCIPECPSGY-TM-NSSN---LL-----CTPC-LGP-CPKVCH
Pan_troglodytes_X2	-QGCHQ---YVIH-NNKCIPECPSGY-TM-NSSN---LL-----CTPC-LGP-CPKVCH
Boleophthalmus_pectinirostris	NIDCHE---YVIH-NGACIPECPSGYTTV-NSFA---LM-----CTLG-TGL-CPKIC-
Larimichthys_crocea_X2	SPDCHE---YVIH-NGACIQECPSGYTTV-NSSS---LN-----CTPC-AGL-CPKVC-
Larimichthys_crocea	SPDCHE---YVIH-NGACIQECPSGYTTV-NSSS---LN-----CTPC-AGL-CPKVC-
Lates_calcarifer	SPDCHE---YVIH-NGACIQECPSGYTTV-NSSS---LN-----CTPC-AGL-CPKVC-
Seriola_lalandi_dorsalis	NPDCHE---YVIH-NGACISECPSGYTTV-NSSS---LN-----CTPC-AGL-CPKVC-
Seriola_dumerili	NPDCHE---YVIH-NGACISECPSGYTTV-NSSS---LN-----CTPC-AGL-CPKVC-
Zootermopsis_nevadensis	GRRC---W-PF-NGSCVDKCPPGYEE--QSNGTITVG-----CQPC-QGR-CSHEC-
Parasteatoda_tepidariorum	YPKVPDVYKPF-NSQCITECPSGYIVD-DNNP---HV-----CQPC-RAK-CPKVC-
Onthophagus_nigriventris	KQEYE---FKTFNNTSCVYKCPKPYTDDPKKKA-----CVSC-DSR-CKKVC-
Nicrophorus_vespilloides	PQEYP---YKTL-NKSCILLECPSDYTYENYDQHK-----CFPC-LGR-CKKEC-
Tribolium_castaneum	GPEKP---FKIF-NNSCILECPNYSN-DTH-----CIPC-QGN-CIKKC-
Nilaparvata_lugens	VRPQP---WKPF-MNQCLIDCPNYAEA-PIDNFRGLDPDRTYRCEPC-KGP-CKKEC-
Blattella_germanica	MRMKP---YKPF-NDSCVLECPPGYVET-EFEH-NRYN-----CTPC-KGP-CRKEC-
Nasonia_vitripennis_X1	TRAYP---FKPF-NNECIMDCPAGYEEV-AEKD--MWS-----CKKC-TGP-CLREC-
Microplitis_demolitor	VREFF---YKPF-NNSCVIECPAGYMDD-ENNG--KAS-----CKKC-DGA-CSKVC-
Neodiprion_lecontei	VKEHP---YKPF-NTCTVIECPPGYMDE-EVNG--KAT-----CKKC-DGL-CLKEC-
Athalia_rosae	VKEFF---YKPF-NTCTVIECPAGYMDE-EIDG--KSS-----CKKC-DGL-CLKEC-
Orussus_abietinus	VKEFF---YKPF-NTCTVIECPAGYMDD-GVDA--RAS-----CKKC-DGP-CLKCC-
Dufourea_novaeangliae	KKSLP---YKPF-NGSCVIECPDYIEE-ELNG--RLL-----CKKC-EGP-CQKCC-
Megachile_rotundata_X1	IKNYP---YKPF-NTCTVIECPPGYMDE-ETNG--KGS-----CKKC-DGP-CLKEC-
Melipona_quadrfasciata	GKNYS---YKPF-NGSCVLECPPGYTDE-ESSN--KAS-----CKKC-EGP-CQKEC-
Apis_mellifera_X1	VKNYP---YKPF-NGSCVIECPPGYMDD-ESNG--RVS-----CKKC-EGS-CQKEC-
Eufriesea_mexicana_1	VSNYP---HKPF-NGSCIMECPPGYMDE-ESNG--KIS-----CKKC-EGR-CQKEC-
Eufriesea_mexicana_2	VSNYP---HKPF-NGSCIMECPPGYMDE-ESNG--KIS-----CKKC-EGR-CQKEC-
Bombus_terrestris	VKNYP---YKSF-NGSCVIECPPGYMDE-ESNG--KVS-----CKKC-EGP-CQKEC-
Bombus_impatiens	VKNYP---YKSF-NGSCVIECPPGYMDE-ESNG--KVS-----CKKC-EGP-CQKEC-
Polistes_dominula_X1	VKDYP---YKPF-NGSCVIECPAGYMDE-EVNN--KTS-----CRKC-KGP-CLKEC-
Cephus_cinctus_X1	VKNYP---YKPF-NGSCVIECPAGYMDE-EVNG--KPS-----CKKC-DGP-CLKEC-
Dinoponera_quadriceps_X2	VPNYP---YKPF-NGSCVIECPPGYMDV-EVDK--KMF-----CKKC-EGP-CLKEC-
Harpegnathos_saltator_X1	MQNYP---YKPF-NGSCVIECPAGYMDY-EVGK--NVS-----CKKC-EGP-CLKEC-
Linepithema_humile_X2	VKKYP---YKLF-NTCTVIECPAGYMET-EGND--PS-----CRKC-NGQ-CLKEC-
Linepithema_humile_X1	VKKYP---YKLF-NTCTVIECPAGYMET-EGND--PS-----CRKC-NGQ-CLKEC-
Ooceraea_biroi	VKDYP---YKPF-NGSCVIECPAGYMES-DDYS---VS-----CRQC-EGP-CLKEC-
Camponotus_floridanus	VKYHP---YKPF-NGTCVIECPAGYMESTDNDQ--NLT-----CRKC-EGS-CLKEC-
Solenopsis_invicta	IKQHP---YKPF-NDSCVIECPAGYMES-EDHG--NVS-----CQKC-EGRQCLREC-
Pogonomyrmex_barbatus_X1	VKLYP---YKLF-NDSCVIECPAGYMEN-ETTR---T-----CQKC-NGQWCMKEC-
Vollenhovia_emeryi_X1	VKMRP---YKPF-NGSCVLECPAGYMES-EERG--SVS-----CQKC-EGRWCLKEC-
Wasmannia_auropunctata	VKNYP---YKPF-NTSCVIECPPGYMES-ARGD-----CEQC-KGRWCLKEC-
Cyphomyrmex_costatus	MKSRP---YKLF-NGTCVTECPPGYMES-DNER-EHAS-----CRKC-EGRWCLKEC-
Trachymyrmex_septentrionalis	MKSRP---YKPF-NGTCVIECPPGYMES-EEKKGKPPPT-----CQKC-EGPCLKEC-
Atta_colombica	MKSRP---YKPF-NGTCVIECPPGYMES-EEKKGKPPPT-----CQKC-EGPCLKEC-
Trachymyrmex_cornetzi	MKSRP---YKPF-NGTCVIECPPGYMES-EEKKGKPPPT-----CQKC-EGPCLKEC-
Acromyrmex_echinatior	MKSRP---YKPF-NGTCVIECPPGYMES-EEKKGKPPPT-----CQKC-EGPCLKEC-
Atta_cephalotes	MKSRP---YKPF-NGTCVIECPPGYMES-EEKKGKPPPT-----CQKC-EGPCLKEC-

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Drosophila_melanogaster	--SSGL---IDSLERAREFHGCTIITGTEPLTISIKRESGAHVM-DELKYGLAAVHKIQS
Halyomorpha_halys	--KGAN---VESIQSAQQLRYCTHIEGPLVIQL---RSGNQSFQKELEENLGHIEEIMG
Rhodnius_prolixus	--YGSV---VDSLEKAERLRKCTHILGSLEIQI---KSGQQSVVAELEDLSLGMIEEIQG
Cimex_lectularius_X1	--SMGN---VDSIQAAQNLRDCTHIDGNLEIHI---GTGKPEVVAKELEENLGMIEEIEG
C._lectularius_X2	--SMGN---VDSIQAAQNLRDCTHIDGNLEIHI---GTGKPEVVAKELEENLGMIEEIEG
Cryptotermes_secundus	--GNATRIPVENIYDIQSLNGCTYVNGSLAIHL---M---GNKVV-EELENNFDAIEEISG
Miniopterus_natalensis	LLEGEK---TIDSVTSAQELRGCTVINGSLIINI---R-GGNNLA-AELEANLGLIEEISG
Callithrix_jacchus	LLDREK---IIDSVTSAQDLRGCTVINGSLIINI---R-GGNNLA-AELEANLGLIEEISG
Heterocephalus_glaber_X1	LLEGEK---TIDSVTSAQELRGCTVINGSLIINI---R-GGNNLA-AELEANLGLIEEISG

Dasytus novemcinctus	LMEGEK--TIDSVTSAQELRGCTVVNGSLIINI---R-GGNNLA-AELEANLGLIEEISG
Tupaia chinensis_X2	LLEGEK--TIDSVTSAQELRGCTVVNGSLIINI---R-GGNNLA-AELEANLGLIEEISG
Homo sapiens_X1	LLEGEK--TIDSVTSAQELRGCTVINGSLIINI---R-GGNNLA-AELEANLGLIEEISG
Pongo abelii_2	LLEGEK--TIDSVTSAQELRGCTVINGSLIINI---R-GGNNLA-AELEANLGLIEEISG
Pan troglodytes_X2	LLEGEK--TIDSVTSAQELRGCTVINGSLIINI---R-GGNNLA-AELEANLGLIEEISG
Boleophthalmus pectinirostris	--MGQK--TIDSVTAAQALRGCTILNGSLIKL---R-GGNNIA-AEELASLGQLEEITG
Larimichthys crocea_X2	--MGLK--TVDSVTAAQALRGCTVLNGSLVINL---R-GGNNIA-AEELASLGQLEEITG
Larimichthys crocea	--MGLK--TVDSVTAAQALRGCTVLNGSLVINL---R-GGNNIA-AEELASLGQLEEITG
Lates calcarifer	--MGLK--TVDSVTAAQALRGCTVLNGSLVINL---R-GGNNIA-AEELASLGQLEEITG
Seriola lalandi dorsalis	--MGLK--TVDSVTAAQALRGCTVLNGSLVINL---R-GGNNIA-AEELASLGQLEEITG
Seriola dumerili	--MGLK--TVDSVTAAQALRGCTVLNGSLVINL---R-GGNNIA-AEELASLGQLEEITG
Zootermopsis nevadensis	--VGGF---VSSIEDAQKLRGCTTILGSLEIFI---RGYGNHIV-RELEENLAAIEEIQG
Parasteatoda tepidarium	--APMT---VDHVGAQNYKGCTRINGSLEIHI---Q-GGSNVI-KELEENLNMVEQIDG
Onthophagus nigroventris	--PGIS---VNNIETAESLKECTHITGSIEIEV-----SGKNIV-PALNANLNMIEEIDG
Nicrophorus vespilloides	--QGMV---IDSVVTAQRKRGCTHINGSLEIQI---RSGGRSVV-SELEENLSMIEEIDG
Tribolium castaneum	--AGVN---VDSINLARQLKGCCTHITSLEIQI---R-GGRNVV-NELEESLGMIEEIDG
Nilaparvata lugens	--EGLN---VDSISSQRLRGCTYIKGSLEIQI---R-GGYNVV-KELEENLNMIEEING
Blattella germanica	--PGVN---VDSIAAQKMRGCTYIRGSLEIQI---R-GGKNVV-KELEENLNMLEEIEG
Nasonia vitripennis_X1	--TGIV---VDSIATAQKLRGCSHIKNLEIAV---R-EGQNV-HELEESLSNIEVITG
Microplitis croceipes	--SGAS---VDSIASAQKLRGCTRIEGSLEIQI---K-GGKNV-KELEENLNMIEEIDG
Neodiprion lecontei	--SGTN---VDSIASAQKLRGCTHITGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Athalia rosae	--SGAN---VDSIASAQKLRGCTTRIMGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Orussus abietinus	--AGTS---VDSIASAQKLRGCTHIVGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Dufourea novaeangliae	--TGAN---VDSIASAQKLRGCTTRITGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Megachile rotundata_X1	--AGDF---VDSIATAQKLRGCTTRITGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Melipona quadrifasciata	--TGMN---VDSIATAQKLRGCTHIVGSLEIQI---R-GGKNIV-KELEESLSMIQVIDG
Apis mellifera_X1	--AGAN---VDSIASAQKLRGCTHITGSLEIQI---R-GGKNIV-KELEDGLSTIEEIDG
Eufriesea mexicana_1	--AGTN---VDSIASAQKLRGCTHITGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Eufriesea mexicana_2	--AGTN---VDSIASAQKLRGCTHITGSLEIQI---R-GGKNIV-KELEDSLSAIEEIDG
Bombus terrestris	--AGAN---VDSIASAQKLRGCTHITGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Bombus impatiens	--AGAN---VDSIASAQKLRGCTHITGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Polistes dominula_X1	--RGTS---VDSIASAQKLRGCTHITGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Cephus cinctus_X1	--AGAS---VDSIASAQKLRGCTHITGSLEIQI---R-GGKNIV-KEFEDSLSMIEEIDG
Dinoponera quadricaps_X2	--FATN---VDSIASAQKLRGCTHIKGSLEIQI---R-GGKNIV-KELEESLSMIEEIDG
Harpegnathos saltator_X1	--PATN---VDSIASAQKLRGCTHIKGSLEIQI---R-GGKNIV-KELEESLSMIEEIDG
Linepithema humile_X2	--PGSN---VDSIASAQKLRGCTHIQGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Linepithema humile_X1	--PGSN---VDSIASAQKLRGCTHIQGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Ooceraea biroi	--AGTN---VDSIASAQKLRGCTRISGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Camponotus floridanus	--TGAN---VDSIASAQKLRGCTHIAGSLEIQI---R-GGKNIV-KELEDNLSTIEEIDG
Solenopsis invicta	--SAAK---VMSIETAQKLRGCTHITGSLEIEI---R-GGKNIV-KELEDNLSTIEEIDG
Pogonomyrmex barbatus_X1	--SAAN---VDSIASAQKLRGCTNIAGSLEIQI---R-GGKNIV-KELEDNLSTIEEIDG
Vollenhovia emeryi_X1	--SGSN---VDSIASAQKLRGCTHIAGSLEIQI---R-SGKNIV-KELEENLNMIEEIDG
Wasmannia auropunctata	--EGAN---VESIASAQKLRGCTHIKGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Cyphomyrmex costatus	--NGAN---VDSIASAQKLRGCTHIAGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Trachymyrmex septentrionalis	--AGAN---VDSIASAQKLRGCTHIAGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Atta colombica	--AGAN---VDSIASAQKLRGCTHIAGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Trachymyrmex cornetzi	--AGAN---VDSIASAQKLRGCTHIAGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Acromyrmex echinator	--AGAN---VDSIASAQKLRGCTHIAGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG
Atta cephalotes	--AGAN---VDSIASAQKLRGCTHIAGSLEIQI---R-GGKNIV-KELEDSLSMIEEIDG

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Drosophila melanogaster	SLMVHLTYGLKSLKFFQSLTEISG----DPPMDAD--KYALYVLDNRDLDELWGPNT--
Halyomorpha halys	YLKIVRSFPLANLNLMLNLRVHIG-----SKLFSDPMLNLSFIMLENQNLQTIWDWDRPA
Rhodnius prolixus	QLKITRSFPLVSLDFFKLNRIIQG---DRHFYFNS--NYSLFIKDNQNLMTIWNWDKRPA
Cimex lectularius_X1	NLRIIHSFPLDSLGGFFKLNKVIHGYKDKKGTNNLV--NHSFLVLDNQNKLKEIWNWDRPA
C. lectularius_X2	NLRIIHSFPLDSLGGFFKLNKVIHGYKDKKGTNNLV--NHSFLVLDNQNKLKEIWNWDRPA
Cryptotermes secundus	YLKISHSYPLVTLNFFKLNKVIHIG-----LRLESD--KFALVIVGNDNLQELWNWEARP
Miniopterus natalensis	YLKIRRSYALVLSFFFRKLRLIQG-----DTLEIG--NYSFYALDNQNLRLQWDSKHK--
Callithrix jacchus	YLKIRRSYALVLSAFFRKLRLIRG-----ETLEAG--NYSFYALDNQNLRLQWDSKHK--
Heterocephalus glaber_X1	YLKIRRSYALVLSFFFRKLRLIRG-----ETLEIG--NYSFYALDNQNLRLQWDSKHK--
Dasytus novemcinctus	YLKIRRSYALVLSFFFRKLRLVIRG-----ETLEVG--NYSFYALDNQNLRLQWDSKHK--
Tupaia chinensis_X2	YLKIRRSYALVLSFFFRKLRLVIRG-----ETLEIG--NYSFYALDNQNLRLQWDSKHK--
Homo sapiens_X1	YLKIRRSYALVLSFFFRKLRLIRG-----ETLEIG--NYSFYALDNQNLRLQWDSKHK--
Pongo abelii_2	YLKIRRSYALVLSFFFRKLRLIRG-----ETLEIG--NYSFYALDNQNLRLQWDSKHK--
Pan troglodytes_X2	YLKIRRSYALVLSFFFRKLRLIRG-----ETLEIG--NYSFYALDNQNLRLQWDSKHK--
Boleophthalmus pectinirostris	FLAVQRSYALVLSFFFRKLRLVIRG-----EELYNG--NYSFYALDNQNLRLQWDSKHK--
Larimichthys crocea_X2	YLTVRRSYALVLSFFFRKLRLVIRG-----EEQEIG--NYSFYALDNQNLRLQWDSKHK--
Larimichthys crocea	YLTVRRSYALVLSFFFRKLRLVIRG-----EEQEIG--NYSFYALDNQNLRLQWDSKHK--
Lates calcarifer	YLTVRRSYALVLSFFFRKLRLVIRG-----EEQEIG--NYSFYALDNQNLRLQWDSKHK--
Seriola lalandi dorsalis	YLTVRRSYALVLSFFFRKLRLVIRG-----EEQEIG--NYSFYALDNQNLRLQWDSKHK--
Seriola dumerili	YLTVRRSYALVLSFFFRKLRLVIRG-----EEQEIG--NYSFYALDNQNLRLQWDSKHK--



Zootermopsis nevadensis	YLKVSRSFPLTSLNFKNLRIIHG-----NKLEDN--WYSLVVLNQNQLQELWDWSSRPQ
Parasteatoda tepidariorum	YLKIARSFPLVSLNFKLSLTVIKG-----DTLDKK--DYSLLVLDNQNQLQELWDWKLRT-
Onthophagus nigriventris	YLKIVRSYPLISLSFFKSLKVIHG-----NAFENG--KYSFVLVDNQNQLQFNWDWENRT-
Nicrophorus vespilloides	YIKVVRSFPLVSLNFFKNLKVIRG-----NSLEFK--KYVVIVSDNQNQLQDLWDFENRT-
Tribolium castaneum	YLKVVRSFPLVSLNFKNLKVIHG-----RQLESQ--KYVFFVLVDNQNQLQELWNWENNK-
Nilaparvata lugens	YLKIVRSFPLVSLNFKLKLKVIHG-----EKLESG--KYALVVLVDNQNQLVELWDFGSPR-
Blattella germanica	YLKIVRSFPLISLNFRLKRLRVHG-----KKLDSN--KYAFVLVDNQNQLQELWDWDTRP-
Nasonia vitripennis_X1	YLKIFRSFPLISLSFLKNLVEIKG-----ETLDMK--DYSLVLDNQNQLQQLWNWTTTP-
Microplitis demolitor	YLKIVRSFPLISLNFKNLKLING-----SQLEND--KYTLAVLDNQNQLQELWDWDTHP-
Neodiprion lecontei	YLKIVRSFPLISLNFKNLHTIHG-----KELESG--KYTFVVLVDNQNQLQELWDMESHK-
Athalia rosae	YLKIVRSFPLISLNFKNLRTIHG-----KTLESG--KYSLVLDNQNQLQELWDLETHK-
Orussus abietinus	YLKIVRCFPLISLNFKNLKIIRG-----NSLDNS--KYTLAVLDNQNQLQELWDWSSK-
Dufourea novaeangliae	NLKIVRSFPLISLNFKNLRLIRG-----NDVENS--KYSLLVMDNQNQLQELWDWSWHR-
Megachile rotundata_X1	YLKIVRSFPLISLNFKNLRLVIRG-----NEINNS--KYSLLVMDNQNQLQELWDWSWHR-
Melipona quadrifasciata	YLKIVRSFPLISLSFLKNLRAIRG-----NDIDNS--KYSLLVMDNQNQLQELWDWDTHD-
Apis mellifera_X1	YLKIVRSFPLISLNFKNLRLVIRG-----NDIDNS--KYTLVMDNQNQLQELWDWSLHK-
Eufriesea mexicana_1	YLKIVRSFPLISLNFKNLRIIRG-----NDIDNS--KYSLLVMDNQNQLQELWDWSLHK-
Eufriesea mexicana_2	YLKIVRSFPLISLNFKNLRIIRG-----NDIDNS--KYSLLVMDNQNQLQELWDWSLHK-
Bombus terrestris	YLKIVRSFPLISLNFKNLRLVIRG-----NDIDNS--KYSLLVMDNQNQLQELWDWSLHK-
Bombus impatiens	YLKIVRSFPLISLNFKNLRLVIRG-----NDIDNS--KYSLLVMDNQNQLQELWDWSLHK-
Polistes dominula_X1	YLKIVRSFPLISLNFKLSLRLVIRG-----NSLDNN--KYTLAVLDNQNQLQELWDWSTHP-
Cephus cinctus_X1	YLKIVRSFPLISLNFKNLRLIKG-----NQLDNG--KYTLAVLDNQNQLQELWDWDTHP-
Dinoponera quadricaps_X2	YLKIVRSFPLISLNFKLSLRIIRG-----NVLENG--KYTLVFDNQNQLQELWDWSTHK-
Harpegnathos saltator_X1	YLKIVRSFPLISLNFKNLRLVIRG-----KILDNA--KYTLVFDNQNQLQELWDWSTHK-
Linepithema humile_X2	YLKIVRSFPLISLNFKNLRLVIRG-----NTLENH--KYSLAVFDNQNQLQELWDWSTHP-
Linepithema humile_X1	YLKIVRSFPLISLNFKNLRLVIRG-----NTLENH--KYSLAVFDNQNQLQELWDWSTHP-
Ooceraea biroi	YLKIVRSFPLISLNFKNLRLVIRG-----NELDNG--KYSLAVLDNQNQLQELWDWRTHR-
Camponotus floridanus	YLKIVRSFPLISLNFKNLRLVIRG-----NTLENN--KYSLAVLDNQNQLQELWDWSTHP-
Solenopsis invicta	SLRIVRSFPLISLNFKNLRLVIRG-----NDSSES--KYSLSVLDNQNQLQELWDWNTHK-
Pogonomyrmex barbatulus_X1	YLKIVRSFPLISLNFKNLRLVIRG-----NELENG--KYSLAVFDNQNQLQELWDWNTHS-
Vollenhovia emeryi_X1	YLKIVRSFPLISLNFKNLRLVIRG-----NQLENG--KYSLAVLDNQNQLQELWDWNTHP-
Wasmannia auropunctata	YLKIVRSFPLISLNFKNLRLVIRG-----KDLENG--KYSLAVLDNQNQLQELWDWSTHP-
Cyphomyrmex costatus	YLKIVRSFPLISLNFKNLRLVIRG-----KTLENG--KYSLAVLDNQNQLQELWDWNTHP-
Trachymyrmex septentrionalis	YLKIVRSFPLISLNFKNLRLVIRG-----QTLENG--KYSLAVLDNQNQLQELWDWNTHP-
Atta colombica	YLKIVRSFPLISLNFKNLRLVIRG-----QTLENG--KYSLAVLDNQNQLQELWDWNTHP-
Trachymyrmex cornetzi	YLKIVRSFPLISLNFKNLRLVIRG-----QTLENS--KYSLAVLDNQNQLQELWDWNTHP-
Acromyrmex echinator	YLKIVRSFPLISLNFKNLRLVIRG-----QTLENG--KYSLAVLDNQNQLQELWDWNTHP-
Atta cephalotes	YLKIVRSFPLISLNFKNLRLVIRG-----QTLENG--KYSLAVLDNQNQLQELWDWNTHP-
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Drosophila melanogaster	---VFIRK-----GGVFFHFNPCLKVSTINQLLPLASKPKFFFEKSDVGADSNNGNRGSC
Halyomorpha halys	KRNFTILA-----GRLFFHYNPCLCKHIYELGKI-AGIEKIKNS-EVAKESNGNKFAC
Rhodnius prolixus	GRNFTINM-----GRPLFNDNPCLKCIKHIRELTTI-AGFKDVKDT-EVT-KQNGVKFAC
Cimex lectularius_X1	GRNFKILN-----GYPFFHYNPMLCYKHIEELTSI-AGIQDIKTI-EITRESNGGRFAC
C. lectularius_X2	GRNFKILN-----GYPFFHYNPMLCYKHIEELTSI-AGIQDIKTI-EITRESNGGRFAC
Cryptotermes secundus	-RNFTIEK-----GTISLHSNPKLCIAEIDELRDI-AGLHNNSAD-EISYESNGNEVTC
Miniopterus natalensis	--NLTITQ-----GKLFFFHYNPKLCLSEIHKMEEI-SGTKGRQERNDIALKTNGDQASC
Callithrix jacchus	--NLTITQ-----GKLFFFHYNPKLCLSEIHKMEEI-SGTKGRQERNDIALKTNGDQASC
Heterocephalus glaber_X1	--NLTITQ-----GKLFFFHYNPKLCLSEIHKMEEV-SGTKGRQERNDIALKTNGDQASC
Dasypus novemcinctus	--NLTITQ-----GKLFFFHYNPKLCLSEIHKMEEV-SGTKGRQERNDIALKTNGDQASC
Tupaia chinensis_X2	--NLTITQ-----GKLFFFHYNPKLCLSEIHKMEEV-SGTKGRQERNDIAPKTNGDQASC
Homo sapiens_X1	--NLTITQ-----GKLFFFHYNPKLCLSEIHKMEEV-SGTKGRQERNDIALKTNGDQASC
Pongo abelii_2	--NLTITQ-----GKLFFFHYNPKLCLSEIHKMEEV-SGTKGRQERNDIALKTNGDQASC
Pan troglodytes_X2	--NLTITQ-----GKLFFFHYNPKLCLSEIHKMEEV-SGTKGRQERNDIALKTNGDQASC
Boleophthalmus pectinirostris	---LTIQK-----GHIVFLYNSKLCISEILRMVEV-TGASIQKE--DIT-KTNGEQASC
Larimichthys crocea_X2	---LTIQ-----GRMFFHYNSKLCMSEIRKMEGV-TGTERQVKNDIASKTNGDQASC
Larimichthys crocea	---LTIQ-----GRMFFHYNSKLCMSEIRKMEGV-TGTERQVKNDIASKTNGDQASC
Lates calcarifer	---LTIQ-----GRMFFHYNSKLCMSEIRKMEEV-TGTERLKVNDIASKTNGDQASC
Seriola lalandi dorsalis	---LTIQ-----GRMFFHYNSKLCMSEIRKMEEV-TGTERLKVNDIASKTNGDQASC
Seriola dumerili	---LTIQ-----GRMFFHYNSKLCMSEIRKMEEV-TGTERLKVNDIASKTNGDQASC
Zootermopsis nevadensis	GLQLKIVK-----GHLFFHYNPKLCLMSEIDKLQNI-SGAPNTNF-DVARENSGDKVAC
Parasteatoda tepidariorum	-NKLKILN-----GKIFFFHNSKLCPSKIQLKTY-AEVADWDER-DVSPSSNGDRVAC
Onthophagus nigriventris	---LQINH-----GKLFFFHFNPCLKCYLIKQLAEK-ANITKFDW-DVAENSNGDKTAC
Nicrophorus vespilloides	---LKIDH-----GGLFFHFNPKLCLMYKIEALREM-ANLSEFEER-DVASNSNGDRAC
Tribolium castaneum	--TLKIDT-----GRLFFHFNPKLCLIREIEKLQNI-THIVDTKL-EVAKNSNGDKIAC
Nilaparvata lugens	EERLRITR-----GKLFFFHFNPKLCLMYKIDNLRKY-LGMPEFTDN-EVARNNSGDKVAC
Blattella germanica	-EKLQILN-----GRLFFHFNPKLCLMYKIEKLQV-ANLPDFTDL-EVAANSNGDKMAC
Nasonia vitripennis_X1	--PLKIGSSNPV--PKVSFHYNPKLCLQTIIEELRER-TGLNPFEV-EVSPSSNGDKVAC
Microplitis demolitor	--PITIKSGDGP--AKIFFHFNPKLCLIHNIKLRDV-ANLSQFTDL-EVAPNSNGDKVAC
Neodiprion lecontei	--SMRILANNGP--VKVFFHFNPKLCLDTIEKFRKG-AGLPEFSDL-EVAPNSNGDKVAC
Athalia rosae	--SIKILARDGP--AKVFFHFNPKLCLDTIEKFRKA-ADLPEFTEL-EVAPNSNGDKVAC

Orussus_abietinus	--KIKILSKDGP--AKIFFHFNPKLCLCKKIEKLREV--AGLQEFDTL--DVAPNSNGDKVAC
Dufourea_novaeangliae	--DIKIESKGEPP--GKMFFHMNPKLCLYKIEALRER--AGLKKFTDY--EVAPNSNGDKVAC
Megachile_rotundata_X1	--DIKILSKDGP--GKIFFHFNPKLCLYKIEMLREK--AGVAPFTDY--EVAPNSNGDKVAC
Melipona_quadrifasciata	--GIKILSKDGP--GRIFFHFNPKLCLYKIEIETLRKK--AGLGPFTDY--DVAPNSNGDKVAC
Apis_mellifera_X1	--EISIKSKDGP--GKIFFHFNPKLCLYKIEMLREK--AGLGPFTDY--EVAPNSNGDKVAC
Eufriesea_mexicana_1	--DIKIQSRDGP--GKIFFHFNPKLCLYKIEMLRKK--AGLGPFTDY--EVAPNSNGDKVAC
Eufriesea_mexicana_2	--DIKIQSRDGP--GKIFFHFNPKLCLYKIEMLRKK--AGLGPFTDY--EVAPNSNGDKVAC
Bombus_terrestris	--DIKILSKGGI--GKIFFHFNPKLCLYKIEMLREK--AGLRPFTDY--EVAPNSNGDKVAC
Bombus_impatiens	--DIKILSKGGI--GKIFFHFNPKLCLYKIEMLREK--AGLRPFTDY--EVAPNSNGDKVAC
Polistes_dominula_X1	--NIAIYSKDGP--AKVFFHFNPKLCFYKIEALRKK--AHLQEFDTL--EVAPNSNGDKVAC
Cephus_cinctus_X1	--KIQIRSNAGP--GKVFFHFNPKLCLHKKIEKLREV--ANLAEFSPL--EVALNSNGDKVAC
Dinoponera_quadriceps_X2	--NITILSKEGP--PKVFFHFNPKLCLSKIETLRQK--AKLNAFTDY--DVAPNSNGDKVAC
Harpegnathos_saltator_X1	--NITILSKEGH--AKIFFHFNPKLCLYKIEKLREV--ANLEYFTDY--DVAPNSNGDKVAC
Linepithema_humile_X2	--NLITILSPAGP--AKLFFHFNPKLCLQKIEILRDK--AKLEDFNDH--DVASSNGDKVAC
Linepithema_humile_X1	--NLITILSPAGP--AKLFFHFNPKLCLQKIEILRDK--AKLEDFNDH--DVASSNGDKVAC
Ooceraea_biroi	--NISIMSKDGP--AKIFFHFNPKLCLYKIEIETLRK--ARLNEFTDL--EVAPNSNGDKVAC
Camponotus_floridanus	--NLITILSSAGS--PKVFFHFNPKLCMYKIDMLREK--AKLDNFTEH--DVAINSNGDKVAC
Solenopsis_invicta	--NITILAKTGP--ARLFFHFNPKLCLHEIEKLRLK--ANLEEFTH--DVASNSNGDKIAC
Pogonomyrmex_barbatus_X1	--NITILAHNGAAKALFFHFNPKLCLHEIEKLREK--AQLDEFTDH--DVASTSNGDKVAC
Vollenhovia_emeryi_X1	--NITILSSKGP--AKLFFHFNPKLCLHEIEKLREK--ARLEEFTH--DVASSNGDKVAC
Wasmannia_auropunctata	--NITILSSVGP--AKLFFHFNPKLCLHEIEKLREK--AKLEEFNDH--DVASSNGDKVAC
Cyphomyrmex_costatus	--NITILSSKGP--AKLFFHFNPKLCLHEIEKLREK--AKLDEFTDL--DVASSNGDKVAC
Trachymyrmex_septentrionalis	--NITILSSGGP--AKLFFHFNPKLCLHEIEKLREK--AKLEEFTH--DVASSNGDKVAC
Atta_colombica	--NITILSSKGP--AKLFFHFNPKLCLHEIEKLREK--AKLEEFTH--DVASSNGDKVAC
Trachymyrmex_cornetzi	--NITILSSGGP--AKLFFHFNPKLCLHEIEKLREK--AKLEEFTH--DVASSNGDKVAC
Acromyrmex_echinator	--NITIMSSGGP--AKLFFHFNPKLCLHEIEKLREK--AKLEEFTH--DVASSNGDKVAC
Atta_cephalotes	--NITILSSGGP--AKLFFHFNPKLCLHEIEKLREK--AKLEEFTH--DVASSNGDKVAC
	. * : * . ** * :

Drosophila_melanogaster	GTAVLNVTLQS-VGANSAMLNV	TTKVEIGEPQKPSNATIVFK--DPRA----	FIGVFVYH
Halyomorpha_halys	NIIDLNIKVHF-RNSTCITIFI	-----APPKFR--DAENQENYLLRYLAYY	
Rhodnius_prolixus	NLVELNISAHL-TFSQSIVIH	-----HKPDFN--NT-S----	LIKYIAYY
Cimex_lectularius_X1	NKLSLNVTVHL-VYENAIALAI	-----EQPEFT--NMAK--YYQMMRFVAYY	
C.lectularius_X2	NKLSLNVTVHL-VYENAIALAI	-----EQPEFT--NMAK--YYQMMRFVAYY	
Cryptotermes_secundus	IVIKMNASSVV-INSTSVTIQV	-----DPFHVP--RGRG---	TLLGYTVHY
Miniopterus_natalensis	ENELLKFSSYIR-TSFDKILLRW	-----EPYWPP--DFRD----	LLGFMLFY
Callithrix_jacchus	ENELIKFSSIR-TSSDKILLKW	-----EPYWPP--DFRD----	LLGFMLFY
Heterocephalus_glaber_X1	ENELLKFSSIR-TSSDKILLRW	-----EPYWPP--DFRD----	LLGFMLFY
Dasypus_novemcinctus	ENELLKFSDIR-TSFDKILLRW	-----EPYWPP--DFRD----	LLGFMLFY
Tupaia_chinensis_X2	ENELLKFSHIR-TSFDKILLKW	-----EPYWPP--DFRD----	LLGFMLFY
Homo_sapiens_X1	ENELLKFSYIR-TSFDKILLRW	-----EPYWPP--DFRD----	LLGFMLFY
Pongo_abelii_2	ENELLKFSYIR-TSFDKILLRW	-----EPYWPP--DFRD----	LLGFMLFY
Pan_troglodytes_X2	ENELLKFSYIR-TSFDKILLRW	-----EPYWPP--DFRD----	LLGFMLFY
Boleophthalmus_pectinirostris	ETHSLTFEQIR-TMSDKIMVKW	-----KAFWPP--DFRD----	LLGFMLVY
Larimichthys_crocea_X2	ENHVLKFTMIR-TMSDKIMVKW	-----EAFWPP--DFRD----	LLGFMLVY
Larimichthys_crocea	ENHVLKFTMIR-TMSDKIMVKW	-----EAFWPP--DFRD----	LLGFMLVY
Lates_calcarifer	ENRVLKFTQIR-TMSDKIMVKW	-----EAFWPP--DFRD----	LLGFMLVY
Seriola_lalandi_dorsalis	ENHVLRFQIR-TMSDKIMVKW	-----EPFWPP--DFRD----	LLGFMLVY
Seriola_dumerili	ENHVLRFQIR-TMSDKIMVKW	-----EPFWPP--DFRD----	LLGFMLVY
Zootermopsis_nevadensis	NVNLNVNSTV-TSSTSVLIEW	-----ERCVLP--DPRS----	VLGYMVYY
Parasteatoda_tepidarium	DVTNMNVTVRN-ASPSIVTVKW	-----DSFGKNLIDDRS----	LLGYVIYY
Onthophagus_nigriiventris	EIKDLIIEIQS-KSSTSQVLYW	-----VPFNIT--DSRK----	LLSYQIYH
Nicrophorus_vespilloides	NVQNLVVNVTN-SGPRAIVLAW	-----APFEMK--DHRA----	LLGYVVYS
Tribolium_castaneum	ELQVLKVDKPKVNSKGVVLEW	-----EPFKID--DPRK----	LLGYIVYS
Nilaparvata_lugens	NISLLDARVET-RSSKGVIKW	-----KEFEHY--DPRT----	LLGYIIYF
Blattella_germanica	NVTKLRATVTK-RDHVAVLIEW	-----QQFEHY--DPRT----	LLGYVVYY
Nasonia_vitripennis_X1	NVTEIRTVIFS-ISSKAAMINW	-----EPFEHH--DMRT----	LLGYVLYS
Microplitis_demolitor	NVTELKVQVIK-KTAAEALIEW	-----KAFEHH--DPRS----	LLGYVVYF
Neodiprion_lecontei	NVTKLHTRVQK-KTSNAALIAW	-----EPFDHH--DQRS----	LLGYVVYF
Athalia_rosae	NVTKLRTRVTK-KTSNAALIEW	-----EAFRHH--DPRS----	LLGYVVYF
Orussus_abietinus	DVELVTRITR-INTAAALIEW	-----DAFEHH--DPRS----	LLGYVVYV
Dufourea_novaeangliae	NVTELKTRVGN-KSPWGAVIEW	-----EPFIHH--DARS----	LLSYVVYF
Megachile_rotundata_X1	NVTELKTRVGK-KSAYGAVIEW	-----EPFVHH--DVRs----	LLGYVVYF
Melipona_quadrifasciata	NVTELMTMVGK-KSPWGAVIEW	-----EPFVHH--DARS----	LLGYVVYV
Apis_mellifera_X1	NVTELKTRVGK-KSPWGAVIEW	-----EPFVHH--DARS----	LLGYVVYF
Eufriesea_mexicana_1	NVTELKTRVGK-KSPWGAVIEW	-----EPFVHH--DARS----	LLGYVVYF
Eufriesea_mexicana_2	NVTELKTRVGK-KSPWGAVIEW	-----EPFVHH--DARS----	LLGYVVYF
Bombus_terrestris	NVTELRTRVGK-KSPWGAVIEW	-----EPFIHH--DARS----	LLGYVVYF
Bombus_impatiens	NVTELRTRVGK-KSPWGAVIEW	-----EPFIHH--DARS----	LLGYVVYF
Polistes_dominula_X1	NVTELKTVVTK-TTSDAALIEW	-----EQFTHH--DPRS----	LLGYVVYF
Cephus_cinctus_X1	NVTDIITRVTK-KTSEALIEW	-----QAFKHH--DPRS----	LLGYVVYF

Dinoponera_quadriceps_X2	NVTELQTKVVK-ETSRGAIIEW	-----EAFMHH--DTRS----	LLGYVVYF
Harpegnathos_saltator_X1	NVTNLYTKVIQ-KTSRGAIIEW	-----EAFMHH--DTRS----	LLGYVVYF
Linepithema_humile_X2	NVTQLKTKVIK-KTSRGAIIEW	-----EAYTHH--DTRS----	LLGYVVYF
Linepithema_humile_X1	NVTQLKTKVIK-KTSRGAIIEW	-----EAYTHH--DTRS----	LLGYVVYF
Ooceraea_biroi	NVTELKTKIIK-KTSRGAIIEW	-----ETFMHH--DTRS----	LLGYIVYF
Camponotus_floridanus	NVTELKTKITK-KTSRGAIIEW	-----EPFSHH--DYSR----	LLGYVVYF
Solenopsis_invicta	NVTELETRVTW-RTPVGAIKW	-----TAFKHH--DIRS----	LLGYVVYF
Pogonomyrmex_barbatus_X1	NVTELKTKVTK-KTPRGAIIEW	-----RAFTHH--DTRS----	LLGYVVYF
Vollenhovia_emeryi_X1	NVTELTPKVIK-RSSRAAIIEW	-----NIFTHH--DTRS----	LLGYVVYF
Wasmannia_auropunctata	NVTELKTRITK-KTSRGVIEIW	-----KGFTHH--DTRS----	LLGYVVYF
Cyphomyrmex_costatus	NVTELKTKVTR-KSSRGAIIEW	-----EAFTHH--DTRS----	LLGYVLYF
Trachymyrmex_septentrionalis	NVTELKTKVTK-KTSRGAIIEW	-----KAFTHH--DTRS----	LLGYVVYF
Atta_colombica	NVTELKTKVTK-KSSRGAIIEW	-----KAFTHH--DTRS----	LLGYVVYF
Trachymyrmex_cornetzi	NVTELKTKVTK-KSSRGAIIEW	-----KAFTHH--DTRS----	LLGYVVYF
Acromyrmex_echinator	NVTELKTKVTK-KSSRGAIIEW	-----KAFTHH--DTRS----	LLGYVVYF
Atta_cephalotes	NVTELKTKVTK-KSSRGAIIEW	-----KAFTHH--DTRS----	LLGYVVYF

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Drosophila_melanogaster	MIDPYGNSTK-SSDDPC-DDRWKVS	-----SPEKSG
Halyomorpha_halys	IKAPFRNVTDYBINECSYRWTVDVINYP	-----EKNYTK
Rhodnius_prolixus	MEEPYGNLTTAIPSDDCEENAWKLNDVAISEEDK	-----SMSNLK
Cimex_lectularius_X1	MEAPHQNVTELTNE-CSESKWKMHDISGLNEPFD	-----GGPPNG
C.lectularius_X2	MEAPHQNVTELTNE-CSESKWKMHDISGLNEPFD	-----GGPPNG
Cryptotermes_secundus	METAVRNVLTETDNDACGVDKWKVAYVVLTTN	-----QSATPT
Miniopterus_natalensis	KEAPYQNVTEFDGQDACGSNSWTVVDDIDPPLRSN	-----DPKSQN
Callithrix_jacchus	KEAPYQNVTEFDGQDACGSNSWTVVDDIDPQRS	-----DPTSQS
Heterocephalus_glaber_X1	KEAPYQNVTEFDGQDACGSNSWTVVDDIDPPLRSN	-----DPKLQN
Dasytus_novemcinctus	KEAPYQNVTEFDGQDACGSNSWTVVDDIDPQRSN	-----DPKSQS
Tupaia_chinensis_X2	KEAPYQNVTEFDGQDACGSNSWTVVDDIDPQRSN	-----DPKSQN
Homo_sapiens_X1	KEAPYQNVTEFDGQDACGSNSWTVVDDIDPPLRSN	-----DPKSQN
Pongo_abelii_2	KEAPYQNVTEFDGQDACGSNSWTVVDDIDPPLRSN	-----DPKSQN
Pan_troglodytes_X2	KEAPYQNVTEFDGQDACGSNSWTVVDDIDPPLRSN	-----DPKSQN
Boleophthalmus_pectinirostris	KEAPFQNVTEFDGQDACGSNSWVIADVEPPPRITD	-----SEKEQM
Larimichthys_crocea_X2	KEAPFRNVTEFDGQDACGSNSWVIADVDPPRRSTE	-----GDKEQS
Larimichthys_crocea	KEAPFRNVTEFDGQDACGSNSWVIADVDPPRRSTE	-----GDKEQS
Lates_calcarifer	KEAPFQNVTEFDGQDACGSNSWVIADVDPPRRATE	-----GDKEQF
Seriola_lalandi_dorsalis	KEAPFQNVTEFDGQDACGSNSWVIADVDPPRRASE	-----GDKEQF
Seriola_dumerili	KEAPFQNVTEFDGQDACGSNSWVIADVDPPRRASE	-----GDKEQF
Zootermopsis_nevadensis	IEAPEQNLTEHDLDACGDCGWHVVDVPYDTDEKNTV	-----DTSQYG
Parasteatoda_tepidarium	RETLFRNLSIFEGRDACGTDAWTVRDVEYVENTN	-----N
Onthophagus_nigriiventris	IEAPVQNFSIFDSRDACGGDGWSIQDVPIPY	-----DHHNVS
Nicrophorus_vespilloides	IKAPEQNTLYDGRDACGGDGWRVDDIYIDNQKP	-----
Tribolium_castaneum	IEAPTQNVTLYDGRDACGGDGWRVDDVAIPENEM	-----
Nilaparvata_lugens	IEAPYQNVSLYDGRDACGGDGWRVIDVSPLEKDNETTLINE	-----DKNKTK
Blattella_germanica	IEAPYQNVTLYDGRDACGGDGWHVTDMPVNQITIT	-----
Nasonia_vitripennis_X1	KEAPFQNVSMYESRDACGGDGWKVVDIGVNEEDKIKMKKIDTISDSNTNNVTNNRSSTY	-----
Microplitis_demolitor	IEAPNRVTMYDGRDACGGDGWRVDDVASESS	-----NESSNL
Neodiprion_lecontei	IEAPN-NVTMYDGRDACGGDGWRVDDVSAEESDRTIHQNG	-----TDSBTT
Athalia_rosae	IEAPN-NVTMFDGRDACGGDGWRVDDVSAVDNPEAPPVLTNGT	-----LTESVS
Orussus_abietinus	IEAPTQNVTMYDGRDACGGDGWRVDDVSSSSTSTSNQSVINNANKT	-----TIEFTS
Dufourea_novaeangliae	IEAPNRNVTMYDGRDACGGDGWKVDDVSVNKNYSLMDPSSV	-----LRPEKN
Megachile_rotundifata_X1	IEAPNQNVTMYDGRDACGGDGWKVDDVPAGSNTNSNADSPINGSKSI	-----GQQKRN
Melipona_quadrfasciata	IEAPHRNMTVYDARDACGGDGWKVDDVSATSNNTTET	-----NKFQKK
Apis_mellifera_X1	IEAPNRNVTMYDGRDACGGDGWKVDDVSASTNSTLMD	-----SRQEK
Eufriesea_mexicana_1	IEAPNKNVTMYDGRDACGGDGWKVDDVSASTNTTQVESGGKFGT	-----GRQEK
Eufriesea_mexicana_2	IEAPNKNVTMYDGRDACGGDGWKVDDVSASTNTTQVESGGKFGT	-----GRQEK
Bombus_terrestris	IEAPNMNVTMYDGRDACGGDGWKVDDVSASTNTTLMESGKFGS	-----GRQEK
Bombus_impatiens	IEAPNMNVTMYDGRDACGGDGWKVDDVSASTNTTLMESGKFGS	-----GRQEK
Polistes_dominula_X1	IEAPNENVTMYDGRDACGGDGWRVDDVSAIEGTTKSVTPNYT	-----EPEKTT
Cephus_cinctus_X1	IEAPNRNVTMYDGRDACGGDGWKVDDVGATESDSSVPLGEE	-----DSNHTE
Dinoponera_quadriceps_X2	IEAPKQNVKMYDGRDACGGDGWRVEDVSAESPIPPSYNGT	-----ILQGPI
Harpegnathos_saltator_X1	IEAPNTNVKMYDGRDACGGDGWRVEDVSAEIPSPSNGT	-----IPQRPI
Linepithema_humile_X2	IEAPNRNVTMYDGRDACGGDGWRVEDISADSVMPQSPNS	-----TDRHPE
Linepithema_humile_X1	IEAPNRNVTMYDGRDACGGDGWRVEDISADSVMPQSPNS	-----TDRHPE
Ooceraea_biroi	IEAPSQNVTMYDGRDACGGDGWRVEDVSAESSTQQSHNGT	-----EIQGPI
Camponotus_floridanus	IEAPYQNVTMYDGRDACGGDGWRVEDVSAESTSQQH	-----NDTQQP
Solenopsis_invicta	IEAPNQNTIMYDGRDACGGDGWRVEDVSADSTTLFANQTQNS	-----THTDLQ
Pogonomyrmex_barbatus_X1	IEAPNQNTIMYDGRDACGGDGWRVEDVSAESTTPQPQ	-----NSSEPV
Vollenhovia_emeryi_X1	IEAPNQNVTMYDGRDACGGDGWRVEDVSAETAPSQSNKST	-----ELQETS
Wasmannia_auropunctata	IEAPNQNVTMYDGRDACGGDGWRVEDVSADSTTMQPYNGTL	-----DPQEPV
Cyphomyrmex_costatus	IEAPNQNVTMYDGRDACGGDGWKVEDVSAESTTMQPHNGT	-----ESQEPV

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IEAPNQNIITMYDGRDACGGDGWRVEDVSAESTTPQPHNGT-----ESQEPV
IEAPNQNIITMYDGRDACGGDGWRVEDVSAESTTPQPHNGT-----ESQEPV
IEAPNQNIITMYDGRDACGGDGWRVEDVSAESTTP-----HNGT-----ESQEPV
IEAPNQNIITMYDGRDACGGDGWRVEDVSAESTTPQPHNGT-----ESQEPV
IEAPNQNIITMYDGRDACGGDGWRVEDVSAESTTPQPHNGT-----ESQEPV
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[illegible]

-SDSKINVTWSYLDKPYGLTRYFIKAKLINRPTNR---NNRDYCTEPLVKAMEND-LPA  
-SSDSLLEWEPPQRTNGHIT EYIVTG-FSRVEESNML-NDMDFCLESFRDRLTNKKPEV  
-SSSEIVVTWEPPPEKPNGKLSHYIVKA-TMHGDDPTYL-EARDYCKYPIKKEETTT--PA  
-SSSEILLHWSPEKPNGKLVS YVVG-FIOEYHPDFL-STRNFCKKPYVHIPPTT--PP

Drosophila\_melanogaster  
Halyomorpha\_halys  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C.\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_novemcinctus  
Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris

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TTPTTKKI-----SDPLAGD----CKCVEG----SKKTSSQEYDDR-
TTILPEFKTQIGIEKHD-----C-CSDE-----EPKKLEHP-
PRLSTDCCVDKKPEKK-----RPGDV-----CESIDP-----HLPPKLYDAP-
PKFMTHVKTQDECCVNSTIPIEDEFEPLVLTTEL--CETADE-----LAKSPPLYEY-
PKFMTHVKTQDECCVNSTIPIEDEFEPLVLTTEL--CETADE-----LAKSPPLYEY-
QLLYDESKPTDSC-----KPVSRTE--CISND-----SSFNVITYQES-
PVESEGSQKHNQSEY-----EESAGEC--CSCPKT-----DSQILKEL-
PVESEGFQKHNQSEE-----EDLAGEC--CSCPKT-----DSQILKEL-
PFESEDAQKHNQSEY-----EESAGEC--CSCPKT-----DSQILKEL-
PFESEDAQKHNQSEY-----EESAGEC--CSCPKT-----DSQILKEL-
PFESEDSQKHNQSEY-----EDSAGEC--CSCPKT-----DSQILKEL-
PFESEDSQKHNQSEY-----EDSAGEC--CSCPKT-----DSQILKEL-
PFESEDSQKHNQSEY-----EDSAGEC--CSCPKT-----DSQILKEL-
PFESEDSQKHNQSEY-----EDSAGEC--CSCPKT-----DSQILKEL-
QVDSNEEQKGNLTTEE-----HGPDKQC--CACPKT-----EKELKKEK-

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Larimichthys\_crocea\_X2  
Larimichthys\_crocea  
Lates\_calcarifer  
Seriola\_lalandi\_dorsalis  
Seriola\_dumerili  
Zootermopsis\_nevadensis  
Parasteatoda\_tepidariorum  
Onthophagus\_nigriiventris  
Nicrophorus\_vespilloides  
Tribolium\_castaneum  
Nilaparvata\_lugens  
Blattella\_germanica  
Nasonia\_vitripennis\_X1  
Microplitis\_demolitor  
Neodiprion\_lecontei  
Athalia\_rosae  
Orussus\_abietinus  
Dufourea\_novaeangliae  
Megachile\_rotundata\_X1  
Melipona\_quadrifasciata  
Apis\_mellifera\_X1  
Eufriesea\_mexicana\_1  
Eufriesea\_mexicana\_2  
Bombus\_terrestris  
Bombus\_impatiens  
Polistes\_dominula\_X1  
Cephus\_cinctus\_X1  
Dinoponera\_quadricaps\_X2  
Harpegnathos\_saltator\_X1  
Linepithema\_humile\_X2  
Linepithema\_humile\_X1  
Ooceraea\_birai  
Camponotus\_floridanus  
Solenopsis\_invicta  
Pogonomyrmex\_barbatus\_X1  
Vollenhovia\_emeryi\_X1  
Wasmannia\_auropunctata  
Cyphomyrmex\_costatus  
Trachymyrmex\_septentrionalis  
Atta\_colombica  
Trachymyrmex\_cornetzi  
Acromyrmex\_echinator  
Atta\_cephalotes

QVDSDEEQKWNQTEE-----QGPGRTRC-----CACPKT-----DKEIKKEI-  
QVDSDEEQKWNQTEE-----QGPGRTRC-----CACPKT-----DKEIKKEI-  
QVDSDEEQKWNQTEE-----QGPGRTRC-----CACPKT-----DKELKKEK-  
QVDSDEEQKWNQTEE-----QGPGRTRC-----CACPKT-----DKELKKEK-  
PSSTSDTVSSQNCCEKGKSEP-----IVLIEDEDDYNMLCVPK-----ATKKNKIFDVYG  
-SIYDDESTQIGYFENVTSST-----ESTENEC-----CSCSKD-----QHRGDDDD-  
TTPKTSDDPAKPTDS-----PPSKNDT-----CDCTTDMRLRES---NALANKEA-  
TKISTAVKQNNNT-----CECRPA-----PPNKQPSIRKQN  
VSVPPVTSTTTSTNDT-----CQCLET-----KPSTSSINE--  
VDVTNQAGKWTLVNDDVY-----TGGKPDD-----CVCMD-----KVNKKKQOE-  
PLDGSADKKEVTNK-----CSCEDK-----TDKTKLREV-  
AEIAAEEKKRAEQELE-AS-----KIPEPST-----CECKKR-----DPVQSES-  
TEIAAEEKKRAEAER-----TKPDVAT-----CECADR-----E-SDQSIREK-  
TTPDEAAHPKPTENKR-PSST-----NGDEIETDDSKKCIDD-----K-D---LREK-  
SVLAEEERKKAQEEKM-VAAA-----KPLTST-----CQCAED-----E-DPLIREK-  
SVMVEERKKAEEKE-LI-----KIPETAT-----CECSDS-----K-SDPLIREK-  
ISAAAAERKRIEEKEE-----TIIAEST-----CECADR-----E-NDQSLIREK-  
ISLAEEERKRMEEKEQS-----VTPETGT-----CECADR-----E-TDQSLIREK-  
-ALAAEEERKRMEEKEQSQM-----MLQEASN-----CDCLDR-----E-TDQSLIREK-  
ITLAEEERKRMEEKEQ-----MVPETGT-----CECADR-----E-TDQSLIREK-  
ISIAAEEKKRIEEKEQ-----MMPETGT-----CDCADR-----E-TDQSLIREK-  
ISIAAEEKKRIEEKEQ-----MMPETGT-----CDCADR-----E-TDQSLIREK-  
-ALAAEEERKRIEEKEQ-----MIPETGT-----CECPDR-----ETDQSLIREK-  
-ALAAEEERKRIEEKEQ-----MIPETGT-----CECPDR-----ETDQSLIREK-  
SVIAAEEKKRAEEE---LV-----KIPDLAS-----CDCADR-----EL-DQSMREK-  
AAMAAEEERKKAEESE-RA-----RTPERTA-----CDCADR-----VPDQSIREK-  
SVMVEERKKAEEERDQST-----KLPDVAT-----CDCADR-----E-TDQSMREK-  
SVMVEERKKAEEERDQST-----KQLEVAS-----CDCADR-----E-ADQSMREK-  
SVMVEERKKAEEKE-LA-----KSPETTS-----CICADR-----EMADQSIREK-  
SVMVEERKKAEEKE-LA-----KSPETTS-----CICADR-----EMADQSIREK-  
SVIAAEEKKRAEEKE-LA-----KSPDAAS-----CPCTDR-----EMTDQSMREK-  
SVIAAEEKKRAEEKE-LV-----KSPETTS-----CGCADR-----ETTDQSMREK-  
EVVAEEKKYFLEKE-FS-----K---TDS-----CLCSDR-----EVTDQSMLEK-  
EVIAEEKKHTELEKE-IA-----K---SDS-----CACSDR-----ETTDQSAREK-  
EETVMEKKKPETEK-----EFTKSDS-----CSCTDR-----EMTDQSMREK-  
DVIAEEKKHTELEKE-FA-----K---SDS-----CVCSDR-----ETTDQSTREK-  
EVIAEEKKHNELEKE-FE-----K---TDS-----CICSDR-----ETTDQSMREK-  
EVIAEEKKHNELEKE-FA-----K---TDS-----CSCSDR-----ETIDQSMREK-  
EVIAEEKKHNELEKE-FA-----K---TDS-----CICSDR-----ETTDQSMREK-  
EVIAEEKKHNELEKE-FA-----K---TDS-----CICSDR-----ETTDQSMREK-  
EVIAEEKKHNELEK-----EFAKTDS-----CICSDR-----ETTDQSMREK-

Drosophila\_melanogaster  
Halyomorpha\_halys  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_noveboracensis  
Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris  
Larimichthys\_crocea\_X2  
Larimichthys\_crocea  
Lates\_calcarifer  
Seriola\_lalandi\_dorsalis  
Seriola\_dumerili  
Zootermopsis\_nevadensis  
Parasteatoda\_tepidariorum  
Onthophagus\_nigriiventris  
Nicrophorus\_vespilloides  
Tribolium\_castaneum  
Nilaparvata\_lugens

-KVQA-GMEFENALQNFIFVFNIRKSKNGSSDKSDGAEGAALDSNAIPNGGATNPSRRRR  
-ELICHNKNLKEAKVASSFINLK-----EASCEK  
-----TCEKMYTLVDSTRL-----PTAEHL  
---DGCHKYVYETLEQPPFLKIY-----ENDNIGRYER  
--DGC-HKYVYETLEQPPFLKIY-----EN-----DNIGRYER  
VNEED-SCDKENSIYSVLYSPRL-----YNGGG  
-EESSFRKTFEDYLHNVFVPRP-----SRKRR  
-EESSFRKTFEDYLHNVFVPRPSPGGAEN-----SRPTRRRR  
-EESSFRKTFEDYLHNVFVPRNPSSAGGAQD-----PRPSRKRR  
-EESSFRKTFEDYLHNVFVPRKTSSGGAED-----SRPSRKRR  
-EESSFRKTFEDYLHNVFVPRKTSSGGAED-----TRPSRKRR  
-EESSFRKTFEDYLHNVFVPRKTSSGGAED-----PRPSRKRR  
-EESSFRKTFEDYLHNVFVPRKTSSGGAED-----PRPSRKRR  
-EDSEYRKTFFENYLHNEVFEIKR-----SRMRR  
-EDSEYRKTFFENYLHNEVFEIKR-----SRQRR  
-EDSEYRKTFFENYLHNEVFEIKR-----SRQRR  
-EDSEYRKTFFENYLHNEVFEIKR-----SRQRR  
-EDSEYRKTFFENYLHNEVFEIKR-----SRQRR  
VEIDPCINIFYFSFIHSGIPELKD-----EQDKL  
-EAAESQIHFEFLQNKVYIRNP-----NSYKVKR  
-ETES-RINFENELQNRVYIKRV-----APPPQP  
AEDVSNQMMFEDNLINIFYVKRI-----QKF-----INKDRKR  
-DVEKSRIDFEDELHNAVYVRKP-----N-----FSERKRKR  
-KEIQFQIQFEDTLQNLVYIKRS-----SLRDKR

Blattella germanica	-EVQA-QIHFENSLHNLVYVCRP-----TQSRKR
Nasonia vitripennis_X1	-EVYS-SITFEDALHNTVYVRRQ-----DNRRRR
Microplitis demolitor	-EVSS-SIAFEDALHNQVYVVRV-----GGNNRRKR
Neodiprion lecontei	-EVSS-SIAFEDALHNQVYVCRP-----SSDRRR
Athalia rosae	-EVSS-SIAFEDALHNQVYIKRP-----TNERRR
Orussus abietinus	-EVSS-SIAFEDALHNQVYVKRI-----SSRRRD
Dufourea novaeangliae	-EASS-AIAFEDAVHNQVYVVRV-----SRRKR
Megachile rotundata_X1	-EASS-SIAFEDALHNQVYVCRK-----SSSRKR
Melipona quadrifasciata	-EASS-AIEFEDALHNQVYIKRP-----SRKKR
Apis mellifera_X1	-EASS-AIDFEDALHNQVYVCRK-----PRKKR
Eufriesea mexicana_1	-EASS-AIAFEDALHNQVYVCRK-----PRKKR
Eufriesea mexicana_2	-EASS-AIAFEDALHNQVYVCRK-----PRKKR
Bombus terrestris	-EASS-AIEFEDALHNQVYIKRP-----PKKKR
Bombus impatiens	-EASS-AIEFEDALHNQVYIKRP-----PKKKR
Polistes dominula_X1	-EVSS-SIAFEDALHNQVYVKRI-----D-ARRR
Cephus cinctus_X1	-EVSS-SIAFEDALHNQVYVVKV-----N-SRRR
Dinoponera quadricaps_X2	-EVSS-SIAFEDALHNQVYVKRM-----SSRRRD
Harpegnathos saltator_X1	-EVSS-SIAFEDALHNQVYVKRN-----VNVRRR
Linepithema humile_X2	-EVSS-SIAFEDALHNQVYVKRM-----MNARRR
Linepithema humile_X1	-EVSS-SIAFEDALHNQVYVKRM-----MNARRR
Ooceraea biroi	-EVSS-SIAFEDALHNQVYVKRM-----T-TRRR
Camponotus floridanus	-EVSS-SIAFEDALHNQVYVKRM-----NARRRD
Solenopsis invicta	-EVSS-SIAFEDALHNQVYIKRA-----QSRRRH
Pogonomyrmex barbatus_X1	-EVSS-SIAFEDALHNQVYIKRI-----N-IRRR
Vollenhovia emeryi_X1	-EVSS-SIAFEDALHNQVYIKRI-----SSRRR
Wasmannia auropunctata	-EVSS-SIAFEDALHNQVYIKRM-----S-QRRR
Cyphomyrmex costatus	-EVSS-SIAFEDALHNQVYVKRM-----SQRRRR
Trachymyrmex septentrionalis	-EVSS-SIAFEDALHNQVYVKRL-----SQRRRR
Atta colombica	-EVSS-SIAFEDALHNQVYVKRL-----SQRRRR
Trachymyrmex cornetzi	-EVSS-SIAFEDALHNQVYVKRL-----SQRRRR
Acromyrmex echinator	-EVSS-SIAFEDALHNQVYVKRL-----SQRRRR
Atta cephalotes	-EVSS-SIAFEDALHNQVYVKRL-----SQRRRR

Drosophila melanogaster	DVALEPELDDVEGSLVLRHVRISITDDTDAFFEKDDENTYK-----
Halyomorpha halys	YFY---SILENNILKTENQPSKRYVDYKKKFVNDLED-----
Rhodnius prolixus	EEP---ADLIR-----RNKDEDEDDLVLV-----
Cimex lectularius_X1	GIS----MIE-----EDDDLVLN-----
C. lectularius_X2	GIS----MIE-----EDDDLVLN-----
Cryptotermes secundus	GIY---DSVDL-----
Miniopterus natalensis	ALG---EEGNV-TTVVPTAPGFPNTSSTIVPTSWEQ-----
Callithrix jacchus	SLD---DTGNM-TAEPTVAVLNTSSTMEPMSPEEP-----
Heterocephalus glaber_X1	SLG---EVNVT--TAVPLVPGFPTLSSVSVPNTAAEEH-----
Dasyus novemcinctus	ALG---DSANV-TVAVPTVPGFPNTSSTSAPTSPEER-----
Tupaia chinensis_X2	SLG---DVGNV-TVAIPTVPGFPNTSSTSVPTSPEEH-----
Homo sapiens_X1	SLG---DVGNV-TVAVPTVAAFNTSSTSVPTSPEEH-----
Pongo abelii_2	SLG---DVGNV-TAAVPTVAAFNTSSTSVPTSPEEH-----
Pan troglodytes_X2	SLG---DVGNV-TVAVPTVAAFNTSSTSVPTSPEEH-----
Boleophthalmus pectinirostris	EVV---GIANH-TLPFLTAMPPTTAPG----EDKE-----
Larimichthys crocea_X2	AVM---SIANR-THPFLTAPSPPHGTGIPEDDEE-----
Larimichthys crocea	AVM---SIANR-THPFLTAPSPPHGTGIPEDDEE-----
Lates calcarifer	SVM---GIANR-THPFHTTAPSPPEGTHSPDDEDEE-----
Seriola lalandi dorsalis	SVM---GIANR-TLPFHTTAPSPPEGTHIPNDEE-----
Seriola dumerili	SVM---GIANR-THPFHTTAPSPPEGTHIPNDEE-----
Zootermopsis nevadensis	TLA---SRFPN-----FNSSGSSQKVLATFNNHTLIN-----
Parasteatoda tepidariorum	HIM---EFLSD-----GPSSFSSTSPASQSGDEV-----
Onthophagus nigriventris	SMT-----LSRKKRQMFPSHNSNVSD-----
Nicrophorus vespilloides	DLDYNLQFPNN-----SLADDESKNRSFSTQNKTD MQG-----
Tribolium castaneum	DVDS--EQLNA-----NRVFNETDEAG-----
Nilaparvata lugens	EISLRDGKITENH----FAESDIRMKTVPVSTDLEV-----
Blattella germanica	DVSMWGDVSHN--SIEPMPGDDDDYPNMAHRYPDSVDPHM-----
Nasonia vitripennis_X1	DVS---YTSVM-LEAVRMKRELTYQEKDVISHSKSLQNSKTNPEQERSLEQQKILNP
Microplitis demolitor	DIS---TDFKP-----NDSDSLKK-----
Neodiprion lecontei	DVS---EIVKT-AKMW---QEQNVSYSYP-----EDKDNAL-
Athalia rosae	DLS---ETVRS-AMVM---RRD--LHSYP---EDKEN-LS-----
Orussus abietinus	TRE---SRALN-AV----THESNAHVNS---QDKKN-GM-----
Dufourea novaeangliae	DVA---RVALV-GG---ADRSP-----DQP-VL-----
Megachile rotundata_X1	ELD---QISYS-SS---KTSKPS-----DQP-IV-----
Melipona quadrifasciata	EIS---EMFVS-----RKAKALEQLPM-----
Apis mellifera_X1	DVS---DILF-----RKTksL-----DQP-VM-----
Eufriesea mexicana_1	DVS---DMSFG-SS---RKTkAA-----DRDQP--M-----

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DVS---DMSFG-SS---RKTCAA-----DRDQP-M-----
DVS---EMSFI-----LSRKTKS-----LDRDQPM-----
DVS---EMSFI-----LSRKTKS-----LDRDQPM-----
DTS---EILRA-VRM---MEQNTTQAEA---LQKKY-PN-----
DVS---AMLSA-VR---KNPDTYYSSYP---EDKDP--N-----
TKG---T-----LGQSRDFYND---QNEES-SS-----
ETL-----ERYKNSYDDQDEEN-SN-----
DTS---EMLVA-AS---LGQIS-----EEKEK-DA-----
DTS---EMLVA-AS---LGQIS-----EEKEK-DA-----
DTS---EMLIA-AD---LAKDSSYSYD---QDKES-AN-----
VKS---EMLIT-AE---LAKDSNY---NQQDKEG-IN-----
TDS---EMLIA-AQ---LAKEPTF---KKVQNWES-I-S-----
HTS---EMLIA-AE---EAKNFTH---NQVKFQDRGI-FN-----
YTN---EVAAS---QAENSSYDPVKFQARESAN-----
GAT---EMLNM-VKKESVLNDDFSYVQD---RERES-TN-----
HIS---EMLIA-AD---LARESTY-E---QDKES-IN-----
HTS---EMLIA-AD---LAKEITY-D---QDRES-TN-----
HTS---EMLIA-AD---LAREFTY-D---QDRES-TN-----
HTS---EMVIA-AD---LAREFTY-D---QDRES-TN-----
HTS---EMLIA-AD---LAKEFTY-D---QDRES-TN-----
HTS---EMLIA-AD---LAREFTYD---QDRES-TN-----
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--DEEDLSSNKQFYEVFA-KELPNNQTHFVIEKLRHFTRYAIFVVCACREEIP---SEKLR
--VKKKKP---LFTIYE---IVPGNRTNVTIKNLDHFMFLYTEFVKACRQIDP---AEEVV
--EDLEQFNSDGTYSASFT-ARYPHNVTLVLTISNLKHYTAYTVEVIACRERHP---RDSAT
--EDVEMLGRDGLSLVKFH-RIFPAEANVALIGLRHFTSYTIEVKACRERVE---GELQR
--EDVEMLGRDGLSLVKFH-RIFPAEANVALIGLRHFTSYTIEVKACRERVE---GELQR
-----ADGHFM-QRSEGNTTTPVVIKDLHHFSKYTMKVVCVRKNHS---GEVDF
-----RPFE-KVV--NKESLVISGLRHFTGYRIELQACNQDSP---EER--
-----KPFE-KVV--NRESLVISGLRHFTGYRIELQACNQDTP---EER--
-----RPFE-KVV--NKESLVISGLRHFTGYRIELQACNQDAP---EER--
-----RPFE-KVV--NKESLVISGLRHFTGYRIELQACNQDVP---EER--
-----RPFE-KVV--NKESLVISGLRHFTGYRIELQACNQDTP---EER--
-----RPFE-KVV--NKESLVISGLRHFTGYRIELQACNQDTP---EER--
-----RPFE-KVV--NKESLVISGLRHFTGYRIELQACNQDTP---EER--
-----RPFE-KVV--NKESLVISGLRHFTGYRIELQACNQDTP---EER--
-----SFESTRTVTVDHAKESAVISNLRHFTSYQIEIHACNHPTD---QAR-
--TFESTKTVTVTHAKESTVISNLRHFTSYQIEIHACNHPTD---PAR-
--TFESTKTVTVTHAKESTVISNLRHFTSYQIEIHACNHPTD---PAR-
--TFESTKTVTVTHAKESTVISNLRHFTSYQIEIHACNHPTD---PSR-
--TFESTKSVVTVHAKESTVISNLRHFTSYQIEIHACNHPTD---PAR-
--TFESTKSVVTVHAKESTVISNLRHFTSYQIEIHACNHPTD---PAR-
-----SYG---VYEKFL-KRINANTTQIVLNMHHMFAQYTIKVAACHEPHY---ADLQK
--TQYKNG---NLLHFK-EVVRHNPF-LVVTNLKHFTYTTIEVRACQDKSE---KNI-
--SYVGNK---TYV---ATYIVTGTFFIITNLQHTTSYEISVQACRKTE---DKGDF
-----KFIVFSYKYV---GKTELRIDNLKHFTAYEITIEACQNKDD---PTDMS
-----AYISFS-TVV---TGTEFYMPLNRHFTVYIEINVQACREKTN---DKLDT
--QRLNE---PQV---KILLQKTSYQVIRGLHHFAQYTTISVSACRQRDE---TDK-L
--DMVSQEPPIPKMYDQFQHVYGNTOYFVINNLSTQVIEHTEYTTISVACREIAPDEPANT
DEDYIEDG---AIVYFK-RKVPANELNFVMGLRHYGKYNIKVTAACRDKKA---NAH--
--NETEED---SEQKFE-RLVPSSNLSFVMNLRHFAFYNIELQACREPVP---DDV--
--DDMVNG---SISLFN-RTV-YGQTNYAVKNLRHYAVYTTIEVQACREPVP---NES-Q
--EKVENG---SYIVFN-RTV-YGQTFSMKNLRHFAVYTTIEVQACREPVP---NDT-L
--DVIKNG---SYVIFE-RNVSSSFTFVPMKELRHHFAAYNIEVLACRERIP---DDA-Q
--DKMENN---SYIVFE-RNISSTNLSFTMKNLRHFAVYNIIEVQVCRHQEM---NDT-
--DKMENG---TVVIFE-RLVPSTNLSFVMKMLRHHFAAYNIEVQACRAQEM---NDT-
--EKIENG---TSVFFE-HVVPSTNLSFVMKMLRHHFAAYNIEVQACRAQDL---NDT-
--KKV-NG---TYVAFE-ENVPSTNRSFVPMKDLRHHFAAYNIEVQACRAQEM---NDT-
--EKIENG---VYTAFE-QMVPSTNLSFVMKMLRHHFAAYNIEVQACRATTEM---NDT-
--EKIENG---VYTAFE-QMVPSTNLSFVMKMLRHHFAAYNIEVQACRATTEM---NDT-
--EKIENG---TYIVFE-QLVPSMNLFSVMKMLRHHFAAYNIEVQACRAQEM---NDT-
--EKIENG---TYIVFE-QLVPSMNLFSVMKMLRHHFAAYNIEVQACRAQEM---NDT-
--EEMINN---TYITFD-RIVPTPNLSYVVKNLRHFAAYNIEVQACREVVK---NDT-
--DKLEDG---IYTTFE-RLVPSTNLSFVMKMLRHHFAAYNIEVQACREVRTV---NDS-
--NKIENG---TYVAFE-VLPSTNLTYVMKMLRHHFAAYDIEVQACRERV---NGT-N
--NKIENG---TYTAFE-VLPSTNLTYVMKMLRHHFAAYDIEVQACRERV---NAT-S
--TKVVNG---TVIMFD-KRVPPTNLTLVMRNLRHHFAAYNIEVQACRERVG---NET-K
--TKVVNG---TVIMFD-KRVPPTNLTLVMRNLRHHFAAYNIEVQACRERVG---NET-K
--DKIENG---TYTVFE-RLVPSTNLTYVMKMLRHHFAAYNIEVQACRERVG---NES-K
--DKLDNG---TYTVFE-RLIPSTNLSVVMKMLRHHFAAYNIEVQACRERVE---NED-D
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Solenopsis\_invicta  
Pogonomyrmex\_barbatus\_X1  
Vollenhovia\_emeryi\_X1  
Wasmannia\_auropunctata  
Cyphomyrmex\_costatus  
Trachymyrmex\_septentrionalis  
Atta\_colombica  
Trachymyrmex\_cornetzi  
Acromyrmex\_echinatior  
Atta\_cephalotes

Drosophila\_melanogaster  
Halyomorpha\_halys  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C.\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_noveboracensis  
Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris  
Larimichthys\_crocea\_X2  
Larimichthys\_crocea  
Lates\_calcarifer  
Seriola\_lalandi\_dorsalis  
Seriola\_dumerili  
Zootermopsis\_nevadensis  
Parasteatoda\_tepidariorum  
Onthophagus\_nigritarsis  
Nicrophorus\_vespilloides  
Tribolium\_castaneum  
Nilaparvata\_lugens  
Blattella\_germanica  
Nasonia\_vitripennis\_X1  
Microplitis\_demolitor  
Neodiprion\_lecontei  
Athalia\_rosae  
Orussus\_abietinus  
Dufourea\_novaeangliae  
Megachile\_rotundata\_X1  
Melipona\_quadrfasciata  
Apis\_mellifera\_X1  
Eufriesea\_mexicana\_1  
Eufriesea\_mexicana\_2  
Bombus\_terrestris  
Bombus\_impatiens  
Polistes\_dominula\_X1  
Cephus\_cinctus\_X1  
Dinoponera\_quadricaps\_X2  
Harpegnathos\_saltator\_X1  
Linepithema\_humile\_X2  
Linepithema\_humile\_X1  
Ooceraea\_biroi  
Camponotus\_floridanus  
Solenopsis\_invicta  
Pogonomyrmex\_barbatus\_X1  
Vollenhovia\_emeryi\_X1  
Wasmannia\_auropunctata  
Cyphomyrmex\_costatus  
Trachymyrmex\_septentrionalis  
Atta\_colombica  
Trachymyrmex\_cornetzi  
Acromyrmex\_echinatior  
Atta\_cephalotes

--DKMENG----SVLVFE--RIIPSTNLTFVVRNLRHFTAYNIEVQACRELDASELNNDT-K  
--DKVVND----TYLVFD--RLVPSTSLTFVVRNLRHFAAYNIEVQACRERVA---NETNK  
--NKAENG----TFIVFE--RSVPSTNHSFVMKNLQHFAAYNIEVQACREPVE---NDT--  
--DKIENG----TFIVFE--RLIPSTNHTFVVRNLRHFAAYNIEVQACRERVG---NDT-K  
--DKVENG----TFTVFE--RLIPSTNLTFVVRNLRHFAAYNIEVQACRERVG---NDT-K  
--DKMENG----TFTVFE--RLIPSTNLTFVVRNLRHFAAYNIEVQACRERVG---NDT-K  
--DKVENG----TFTVFE--RLIPSTNLTFVVRNLRHFAAYNIEVQACRERVG---NDT-K  
--DKVENG----TFTVFE--RLIPSTNLTFVVRNLRHFAAYNIEVQACRERVG---NDT-K  
--DKVENG----TFTIFE--RLISSTNLTFVVRNLRHFAAYNIEVQACRERVG---NDT-K  
--DKVENG----TFTVFE--RLIPSTNLTFVVRNLRHFAAYNIEVQACRERVG---NDT-K

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DTSFKKSL-----CSDYDTVFQTTKRKKFADIV-MDLKVDLE----HANNTESPVVR  
TDKDR-----CSMSSTVTLRLTLRKLDADDV-SWLTTEVN-----NRSVQLK  
T--KR-----CSLNAFTLRLTLDPKADNIEGGIKESVVE-----NRTVITIT  
S--AN-----CSISAFITLKTLSDSKADEIVGGLRVQVE-----NRTAILN  
S--AN-----CSISAFITLKTLSDSKADEIVGGLRVQVE-----NRTAILN  
EWNDKQ-----CSPASLITARTRKLETADHI--DSSSVKVT-----VASGTVRVF  
-----CSVAAYVSARTMPEAKADDIVGPVTHEIF-----ENNIVHLM  
-----CSVAAYVSARTMPEAKADDIVGPVTHEIF-----ENNIVHLM  
-----CSVAAYVSARTMPEAKADDIVGPVTHEIF-----DNNVHLM  
-----CSVSAYVSARTMPEAKADDIVGPVTHEIF-----ENNIVHLM  
-----CSVAVYISARTMPEAKADDIVGPVTHEIF-----ENNIVHLM  
-----CSVAAYVSARTMPEAKADDIVGPVTHEIF-----ENNIVHLM  
-----CSVAAYVSARTMPEAKADDIVGPVTHEIF-----ENNIVHLM  
-----CSVAAYVSARTMPEAKADDIVGPVTHEIF-----ENNIVHLM  
-----CSMAAYVSARTLPEDKADDIVTAIGYEVV-----DNTVHIS  
-----CSMAAYVSARTMPEDKADDIASPINYEVT-----ENTVHIT  
-----CSMAAYVSARTMPEDKADDIASPINYEVT-----ENTVHIT  
-----CSMAAYVSARTMPEDKADDIVGPILYEVT-----ENTVHIT  
-----CSMAAYVSARTMPEDKADDIVGPISYNVA-----ENTVHIT  
-----CSMAAYVSARTMPEDKADDIVGPISYDVA-----ENTVHIT  
Y--NTNDITLAEYEWCSFAGLVTVRTRKHLAIADTI--DSDHLAAQ--VS---NGTSGTVRLT  
---EP-----CSKAITSVRTLHLGAGADDI--RSSSVH---ILTE--NVYAYSSPIR  
Q--PN-----CSDSTSKEIRTESKHDADNI--ASNISIV-----SVTENSITIS  
Y--KP-----CSQKALTARTESKAGADKI---TEVRVA-----NKSMSMVTLV  
E--NP-----CSSKNMKTHRTLKKKGADDI---KQIEVK-----NQSLGMVSLT  
IMTNN-----CSTHSIISARTKKLANADV--SEIWEHV--IENPVNHTQPIVKLY  
T--TN-----CSQQSFLTARTLRLPGADNV--LSSKLVE--VLNE---SRIVKLK  
E--LP-----CSSESMSKSLQTLRLDHADDEI--PSGTLRLQ--KQAN--NDSSTSIKLT  
S--QR-----CSTKIIQNCRTLPEFHADDI--PTGSLKLEKIHG--NTRSPIVKLQ  
S--NY-----CSTKSIKTARTEPLISADDI--PNNTFDLEVITG--NNSRSMVKLS  
N--SC-----CSTKSIKTARTLPIDSADDI--PQNSFKYNNVVG--NNSSESTVNLW  
D--KP-----CSTKSMRTYRTLPLESADDI--PPESFQMN--LGG--NNSLTMVTLQ  
L--KK-----CSTKIMRTYRTLPLESADNI--PPDSFKMR--ISGE--NNSLTMVTLQ  
Y--KK-----CSTKSMRTYRTLPMKSADNI--PPNTFKMS--ISGE--NNSLTMVTLQ  
Y--RR-----CSTKSMRTYRTLPLDSADNI--PPNTFKIS--ISGE--NNSLTMVTLQ  
Y--KK-----CSTKSMRTFRTMSLDSADNI--PPNTFKMS--ISGE--NNSLTMVTLQ  
Y--KN-----CSTKSMRTFRTLRLSADNI--PPNSFKIS--ISGE--NNSLTMVTLQ  
Y--KN-----CSTKSMRTFRTLRLSADNI--PPNSFKIS--ISGE--NNSLTMVTLQ  
Y--KK-----CSTKSMRTYRTLPLESADNI--PPNTFKMS--ISGE--NNSLTMVTLQ  
Y--KK-----CSTKSMRTYRTLPLESADNI--PPNTFKMS--ISGE--NNSLTMVTLQ  
N--DT-----CSTKSMRTYRTLPLKGADNI--PPNTLKW--KIKT--NNTFD--IKLT  
L--NN-----CSTKSMRTYRTLPLESADNI--PANTFKLS--TIGG--NNSLAMVRLQ  
I--KN-----CSTKSMRTYRTLAMESADNI--PPNTFKLS--VSNE--NNSITVVMVF  
I--KN-----CSTKSMRTYRTLAMESADNI--PANTFRAT--LGG--NNSVAVVTLN  
K--KN-----CSTKSMRTYRTFAMESADNI--PLNTFRLS--ISGENNNSLTAVTLY  
K--KN-----CSTKSMRTYRTFAMESADNI--PLNTFRLS--ISGENNNSLTAVTLY  
K--KN-----CSTKSMRTYRTLAMESADNI--PPNTFKLS--ISGE--NNSLTMVTLQ  
SKKN-----CSTKSMRTYRTLAMESADNI--PPNTFKFS--ISGG--NNSLTIVTLY  
S--KN-----CSMKSMRTYRTLAMENADNI--PPNTFTLT--KSGE--NNSLTIIITLS  
S--KN-----CSTKSMKTHRTLAMESADNI--PLNTFDLK--VNGE--NNSLTIIITLR  
T--QN-----CSTKSMKTHRTLPMDDADNI--PPDTFKLK--YSGE--NNSLTIVTLS  
S--KN-----CSTKSMKTHRTLSMDIADNI--PADTFQLK--TSGE--NNSLPVTLQ  
S--KN-----CSTKSMKTYRTLSMESADNI--PPNTFELK--TSGE--NNSFTIVTLS  
S--KN-----CSTKSMKTHRTLFMESADNI--PSNTFELK--TSGE--NNSFTIVTLS  
S--KN-----CSTKSMKTYRTLSMESADNI--PSNTFELK--TSGE--NNSFTIVTLS  
N--NN-----CSTKSMKTYRTLSMESADNI--PSNTFELK--TSGE--NNSFTIVTLS  
S--KN-----CSTKSMKTYRTLSMESADNI--PSNTFELK--TSGE--NNSFTIVTLS  
S--KN-----CSTKSMKTYRTLSMESADNI--PSNTFELK--TSGE--NNSFTIVTLS

\*\* \* \*\* : :

Drosophila\_melanogaster  
Halyomorpha\_halyi  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C.\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_novemcinctus

RANSIAG--YGDFTEV-----EH--IKVEPPPS---YAKVFFWLLGLIGLAFLIVLSLF  
RAISLAG--LGNFTEY-----KL--VSIYQFSS---KKIILIVGVGAICIIIVAALAA  
RALSLAG--AGEFTEP-----EH--FSISEYSS---TNIITTF-FVITITILLIGI  
RSQSLAG--PGKFTAP-----VY--FTISGQFA-K-DMMAVAVLTV-VILLVILSVT  
RSQSLAG--PGKFTAP-----VY--FTISGQFA-K-DMMAVAVLTV-VILLVILSVT  
KTTSLAG--ESKYTNI-----AT--FTVNREIQ-TASRRPEIFVLL-SVIISSILLF  
RATSLAG--NGSWTDP-----TY--FYVANLYDVPNSIAKIVIGPL-V-FVFLFSVVI  
RATSLAG--NGSWTEP-----TY--FYVSDYLDVPSNSIAKIIIGPL-I-FVFLFSVVI  
RATSLAG--NGSWTEA-----TY--FYVTNYSDVSSNSIAKMIIGPL-I-FVFLFSIVI  
RATSLAG--NGSWTEA-----TY--FYVTDYLDVPSNPITKIIIGPL-I-FVFLFSIVI

Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris  
Larimichthys\_crocea\_X2  
Larimichthys\_crocea  
Lates\_calcarifer  
Seriola\_lalandi\_dorsalis  
Seriola\_dumerili  
Zootermopsis\_nevadensis  
Parasteatoda\_tepidariorum  
Onthophagus\_nigriventris  
Nicrophorus\_vespilloides  
Tribolium\_castaneum  
Nilaparvata\_lugens  
Blattella\_germanica  
Nasonia\_vitripennis\_X1  
Microplitis\_demolitor  
Neodiprion\_lectei  
Athalia\_rosae  
Orussus\_abietinus  
Dufourea\_novaeangliae  
Megachile\_rotundata\_X1  
Melipona\_quadrifasciata  
Apis\_mellifera\_X1  
Eufriesea\_mexicana\_1  
Eufriesea\_mexicana\_2  
Bombus\_terrestris  
Bombus\_impatiens  
Polistes\_dominula\_X1  
Cephus\_cinctus\_X1  
Dinoponera\_quadriceps\_X2  
Harpegnathos\_saltator\_X1  
Linepithema\_humile\_X2  
Linepithema\_humile\_X1  
Ooceraea\_biroi  
Camponotus\_floridanus  
Solenopsis\_invicta  
Pogonomyrmex\_barbatus\_X1  
Vollenhovia\_emeryi\_X1  
Wasmannia\_auropunctata  
Cyphomyrmex\_costatus  
Trachymyrmex\_septentrionalis  
Atta\_colombica  
Trachymyrmex\_cornetzi  
Acromyrmex\_echinator  
Atta\_cephalotes

Drosophila\_melanogaster  
Halyomorpha\_halys  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C.\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_novemcinctus  
Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris  
Larimichthys\_crocea\_X2  
Larimichthys\_crocea  
Lates\_calcarifer  
Seriola\_lalandi\_dorsalis  
Seriola\_dumerili  
Zootermopsis\_nevadensis

RATSLAG--NGSWTEA-----TY--FYVTDYV-PSNIAKIIIGPL--IFVFLFSVVI  
RATSLAG--NGSWTEP-----TY--FYVTDYV-PSNIAKIIIGPL--IFVFLFSVVI  
RATSLAG--NGSWTEP-----TY--FYVTDYLDVPSNIAKIIIGPL-I-FVFLFSVVI  
RATSLAG--NGSWTEP-----TY--FYVTDSDP-M-SIVKIAVAPV-ICFALLLIVA-  
RATSLAG--NGSWTEP-----TY--FYVQDASD-PLYIVKIVIGPI-ICFVLLLFVS-  
RATSLAG--NGSWTEP-----TY--FYVQDASD-PLYIVKIVIGPI-ICFVLLLFVS-  
RATSLAG--NGSWTEP-----TY--FYVQDPSD-PLYVVKIVIGPV-ICFVLLLFVA-  
RATSLAG--NGSWTEP-----TY--FYVQDASD-PLYVVKIVIGPV-ICFVLLLFVA-  
RATSLAG--NGSWTEP-----TY--FYVQDASD-PLYVVKIVIGPV-ICFVLLLFVA-  
RAMSLAG--EGPFTKL-----FH--FTVEELPA---VSSWGSIMGVFVGCLLVLICFI  
RATSMAG--HGNWTS�-----VY--FHIVAASE---SSATEPILVWL-GIILFLCIAIG  
QAISDAN-TGGAFSLP-----VS--VYIDEPSD-----SWNIIAGI-IILVLIVGFI-  
IGKSQAD--YGEYSKLYSELDDSKYSTFSIDEPNS---GISELAKIATGLAVVFTFIVV-  
SATTSAG--YANFSPY-----AY--FYIEERPS---NTYVTLI---VCMILILVILA  
CATSLAGLANCSQSP-----RY--FEIQGYSS-V-TSLQIIIFATF-MTAGMLLIL--  
RATSLAG--VGDTAV-----RY--FFIKEAAT-T-NNMEILIGAL-VGTAVVTTMLC  
RATSFAG--NGEYTEP-----KY--FDVPESNY-SMPAWKVILIVL-FSISFILGAFI  
RATSLAG--SGADSEV-----LY--VYIDEDSA-K-EVFWIVFWSV-SSIVILITSL-  
RATSLYG--NGAYTV-----KH--FYIEELNA---GGSHPFLWPL-LSVGLLILIL  
RATSLAG--NGAYTAT-----KY--FYIRELNA---GGSHPFLWPL-LSVGLLILIL  
RATSLAG--NGAYTNV-----RY--FYIEEYNT-T-GKFWIMFWSI-GFIVIVILPL-  
RATSLAG--NGAYTEV-----KY--FYIQERNI-L-STFWLVFWLL-FCLLVLATSF-  
RATSLAG--YGDYTV-----KY--FYIEERNI-I-GVFWILFWLL-LGCVLLIFSL-  
RATSLAG--YGAYTHV-----RY--FYVDERNG-V-STFWLIFWVL-FCAISVIVG--  
RATSLAG--NGAYTHV-----KY--FYIEERNI-M-NTFWIVFWLL-FCAVLAALSL-  
RATSLAG--YGAYTNV-----KY--FYIEERYT-I-ITFWVFWLL-FCVFIASL-  
RATSLAG--YGAYTNV-----KY--FYIEERYT-I-ITFWVFWLL-FCVFIASL-  
RATSLAG--YGAYTHV-----KY--FYIEERNI-L-STFWVIFWLL-LCVFIAAFGF-  
RATSLAG--YGAYTHV-----KY--FYIEERNI-L-STFWVIFWLL-FCAVIAIVSF-  
RATSLAG--NGNYTEP-----SY--FFIEESNI---GLYVWLFWSI-FCILVVLSP-  
RATSLAG--NGAYTEV-----KY--FYIEEYST-S-GTFWILFWCI-LVLVAILVC-  
RATSLAG--NGAYTEL-----RY--FYVEEYGT-I-STFWILSLSF-FCIIMIPVLM-  
RATSLAG--NGAYSEL-----RI--FYIEEYGT-ISSTSWIL-LVV-FCIIFILVSM-  
RATSLAG--NGAYTEV-----KY--FYIPESGT-I-SKFQIILFSI-LGCVLLIPMTW  
RATSLAG--NGAYTEV-----KY--FYIPESGT-I-SKFQIILFSI-LGCVLLIPMTW  
RATSLAG--YGAYTEV-----KY--FYIREYGG-----YATLLGSI-FGSIAFILVLG  
RATSLAG--YGAYTEV-----KY--FYIKEYGM-L-STFWIFFWLI-LTLMSSIL-  
RATSLAG--NGAYTEV-----KY--FSIEESDT-L-SEFWIVICSI-IGVMTIIF-  
RATSLAG--NGAYTEV-----QY--FYVREHGA-F-STTWIFFWLI-LGVVIFLFL-  
RATSLAG--NGAYTEI-----KY--FSIPEYGT-F-NTFWVFWFSI-LGIVIMFSSL-  
RATSLAG--NGAYTEV-----KY--FYISEHGT-L-STFWIFFWLI-LSIVIMSSSL-  
RATSLAG--NGAYTEV-----KY--FYIPEYGT-F-GTFWIFFWLI-LGVVIMFSSL-  
RATSLAG--NGAYTEV-----KY--FYIPEYGT-F-GTFWIFFWLI-LGVVIMFSSL-  
RATSLAG--NGAYTEV-----KY--FYIPEYGT-F-GTFWIFFWLI-LGVVIMFSSL-  
RATSLAG--NGVYTEV-----KY--FYIPEYGT-F-STFWILFWSI-LGVVIMFSSL-  
RATSLAG--NGAYTEV-----KY--FYIPEYGT-L-GTFWILFWSI-LGVVITFTSL-  
RATSLAG--NGAYTEV-----KY--FYIPEYGT-F-GTFWILFWSI-LGIVITFSSL-

: . : . :

GYVCYLHKKRVPSNDL---HMNTEVNPFYASM-----Q-YIPDDWEVLRENIQLAPLG  
SVAYFWKRITMRNE---LIASVNPEYLGL-----P-LVDEEWELPRERQVIRELK  
VAGFVYYHRRKMNQEV---LIASVNPEYFGL-----P-TVDEEWELPRDRVIRELK  
LAVWYYRKNLMINQP---VLIASVNPEYCGL-----L-HFDEEWELPRERVHIVKELK  
LAVWYYRKNLMINQP---VLIASVNPEYCGL-----L-HFDEEWELPRERVHIVKELK  
CLSYFLRKKMKENAFR---TIVTSPNPEYVSL-----AIYEDWEIVRDKIELVRLMS  
GSIYFLRKKRQPDGPMG-PLYASSNPEYLSASDVFPSCSV-YVPDEWEVPRDKITLLRELG  
GSIYFLRKKRQPDGPMG-PLYASSNPEYLSASDVFPSCSV-YVPDEWEVPRDKITLLRELG  
GSIYFLRKKRQPDGPMG-PLYASSNPEYLSASDVFPSCSV-YVPDEWEVPRDKITLLRELG  
GSIYFLRKKRQPDGPMG-PLYASSNPEYLSASDVFPSCSV-YVPDEWEVPRDKITLLRELG  
GSIYFLRKKRQPDGPMG-PLYASSNPEYLSASDVFPSCSV-YVPDEWEVPRDKITLLRELG  
GSIYFLRKKRQPDGPMG-PLYASSNPEYLSASDVFPSCSV-YVPDEWEVPRDKITLLRELG  
GSIYFLRKKRQPDGPMG-PLYASSNPEYLSASDVFPSCSV-YVPDEWEVPRDKITLLRELG  
GSIYFLRKKRQPDGPMG-PLYASSNPEYLSASDVFPSCSV-YVPDEWEVPRDKITLLRELG  
IGGFVVMFKNQQTQPSG-P-IYASSNPEYLSAND-----V-YEEDWEVPRDKINILRELG  
VAGFVMFKNQQTQPSG-P-IYASSNPEYLSAND-----V-YEEDWEVPRDKINILRELG  
VAGFVMFKNQQTQPSG-P-IYASSNPEYLSAND-----V-YEEDWEVPRDKINILRELG  
VAGFVMFKNQQTQPSG-P-IYASSNPEYLSAND-----V-YEEDWEVPRDKINILRELG  
VTGFVMFKNQQTQPSG-P-IYTSSNPEYLSAND-----V-YEEDWEVAREKINILRELG  
VTGFVMFKNQQTQPSG-P-IYTSSNPEYLSAND-----V-YEEDWEVAREKINILRELG  
VLAMLWWKKRAKERSLM---IIASVNPDYISAGD-----VIYVEDDWEVAREELKLVRELG

Drosophila\_melanogaster  
Halyomorpha\_halys  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C.\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_novemcinctus  
Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris  
Larimichthys\_crocea\_X2  
Larimichthys\_crocea  
Lates\_calcarifer  
Seriola\_lalandi\_dorsalis  
Seriola\_dumerili  
Zootermopsis\_nevadensis  
Parasteatoda\_tepidariorum  
Onthophagus\_nigriventris  
Microphorus\_vespilloides  
Tribolium\_castaneum  
Nilaparvata\_lugens  
Blattella\_germanica  
Nasonia\_vitripennis\_X1  
Microplitis\_demolitor  
Neodiprion\_lecontei  
Athalia\_rosae  
Orussus\_abietinus

[illegible]

Drosophila\_melanogaster  
Halyomorpha\_halys  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C.\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_novemcinctus  
Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris  
Larimichthys\_crocea\_X2  
Larimichthys\_crocea  
Lates\_calcarifer  
Seriola\_lalandi\_dorsalis  
Seriola\_dumerili  
Zootermopsis\_nevadensis  
Parasteatoda\_tepidariorum  
Onthophagus\_nigriiventris  
Nicrophorus\_vespilloides  
Tribolium\_castaneum  
Nilaparvata\_lugens  
Blattella\_germanica  
Nasonia\_vitripennis\_X1  
Microplitis\_demolitor  
Neodiprion\_lecontei  
Athalia\_rosae  
Orussus\_abietinus  
Dufourea\_novaeangliae  
Megachile\_rotundata\_X1  
Melipona\_quadrifasciata  
Apis\_mellifera\_X1  
Eufriesea\_mexicana\_1  
Eufriesea\_mexicana\_2  
Bombus\_terrestris  
Bombus\_impatiens  
Polistes\_dominula\_X1  
Cephus\_cinctus\_X1  
Dinoponera\_quadriceps\_X2

[illegible]

[illegible][illegible]



DILQMAVEIADGMSYLAAKKFVHRDLAARNCMVAEDLTVKIGDFGMTRDIYETDYYRKGS  
DILQMAVEIADGMSYLAAKKFVHRDLAARNCMVAEDLTVKIGDFGMTRDIYETDYYRKGS  
DILQMAVEIADGMSYLAAKKFVHRDLAARNCMVAEDLTVKIGDFGMTRDIYETDYYRKGS  
DILQMAVEIADGMSYLAAKKFVHRDLAARNCMVAEDLTVKIGDFGMTRDIYETDYYRKGS  
\* \*

[illegible]

MERPENCDFLHKLMLQRCWHRRSSARPSFLDIITAYLEPQCPN-SQFKEVS-FYHSEAG--  
LDLPPIYPKPFKTLMLWCWKWKPKFRPSFLQILDELHEHTT--KGFREVSYDSEPG--  
LELPVYPRPFKTLIMAWCWRWKPKFRPCFFQILSELEHLLT--VSFRTVCFY-----  
LELPVYPRPFKSLTAWCWRWKPKFRPSFIEILRELEYMT--VSFRQVS-FNSEAG--  
LELPVYPRPFKSLTAWCWRWKPKFRPSFIEILRELEYMT--VSFRQVS-FNSEAG--

Drosophila\_melanogaster  
Halyomorpha\_halys  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C.\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_novemcinctus  
Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris  
Larimichthys\_crocea\_X2

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-----LQHREKERKERHQLDAFAAVPLDQDLQDREQQEDATTPLRMGDYEQNSSLDQPPE
-----REAREA
-----
-----LQASRG-----AHSSET
-----LQASRG-----AHSSET
-----HELRGTWYQQRTRSF-----FEED-----
-----KAPESEE-----LEME-----FEDMES
-----KAPESEE-----LEME-----FEDMEN
-----KAPESEE-----LEME-----FEDMEN
-----KAPESEDE-----LEME-----FEDMEN
-----KAPESEE-----LEME-----FEDMES
-----KAPESEE-----LEME-----FEDMEN
-----KAPESEE-----LEME-----FEDMEN
-----KAPESEE-----LEME-----FEDMEN
-----KPPETED-----FDLD-----MENMES
-----KPPETED-----FDLD-----MENMES

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Larimichthys_crocea	-----KPPETED-----FDLD-----MENMES
Lates_calcarifer	-----KPPESD-----FDLD-----MENMES
Seriola_lalandi_dorsalis	-----KPPESD-----FDLD-----MENMES
Seriola_dumerili	-----KPPESD-----FDLD-----MENMES
Zootermopsis_nevadensis	IKTNMAQQQDLDSLCELQFDQTFVSSPPVSFYQLLEETI-----P--SEENVV
Parasteatoda_tepidariorum	-----TENDDSVTPNTPLRSS-----MREE-----
Onthophagus_nigriventris	-----MEARSTRNNQMI-----IQDDVM
Nicrophorus_vespilloides	-----MEARNFRSTLTP-----CQDDAR
Tribolium_castaneum	-----IEARSSRPTSP-----SQDDPS
Nilaparvata_lugens	-----GQERRASTSTPQ-----ATVEEE
Blattella_germanica	-----REQRVPPRAE-----LTDDPS
Nasonia_vitripennis_X1	-----VEVRNQNPSPSQYRTDKEL--EMV-MQE-SRED-----E--AEGGED
Microplitis_demolitor	-----IEARNQNTSLSPINDNF--EMAPLED-LRED-----E--QEGDED
Neodiprion_lectei	-----IEARNQNASHSPQTDKDL--EMETLRN-LQDEEA-----D--QEGSEE
Athalia_rosae	-----IEARHQNASHSPQADKDM--EMATLHD-LREDDV-----DGEGESEE
Orussus_abietinus	-----VEARNQNRSQHSPTDKDF--EIVTLHE-LREDEA-----E--AEGGED
Dufourea_novaeangliae	-----IEARSONRSNSSQTDHL--ELSTLQD-LQEE-----E--VEGDED
Megachile_rotundata_X1	-----IDARNQNRSSTSPQIDQHL--GLTALQD-SQDE-----D--AEDEED
Melipona_quadrifasciata	-----VEARNQNRSNSPQINQHL--ELTTLQD-LQEE-----E--AEGGED
Apis_mellifera_X1	-----VEARNQNRSNSPQTDKHL--ELATLQD-LQEE-----E--AEGGED
Eufriesea_mexicana_1	-----VEARNQNRSNSPQIDKHL--ELSSLQD-LQEE-----E--AEGGED
Eufriesea_mexicana_2	-----VEARNQNRSNSPQIDKHL--ELSSLQD-LQEE-----E--AEGGED
Bombus_terrestris	-----VEARNQNRSNSPQIDQHL--ELATLQD-LQEE-----E--VEGEED
Bombus_impatiens	-----VEARNQNRSNSPQIDQHL--ELATLQD-LQEE-----E--VEGEED
Polistes_dominula_X1	-----IEARNQNMSPQTDKDL--EMTTLQE-FREE-----E--AEGGED
Cephus_cinctus_X1	-----ADARHQNNSHSPHTDKDL--EISTLQD-LRED-----E--GEGEED
Dinoponera_quadricaps_X2	-----IEARNQNSSHSPQNDKDL--EMAALQD-LREE-----E--IEGEED
Harpegnathos_saltator_X1	-----IEARNQNSSHSPQNDKDL--EMAALQD-LREE-----E--VEGEED
Linepithema_humile_X2	-----IEARNQNSSHSPQ-NEDL--EMVALQD-LREE-----E--LEGGED
Linepithema_humile_X1	-----IEARNQNSSHSPQ-NEDL--EMVALQD-LREE-----E--LEGGED
Ooceraea_biroi	-----IEARNQNNSYSSD-NEDL--EMAALQD-LR-E-----E--IEGEDD
Camponotus_floridanus	-----IEARNQNSSHSPQNDQDL--EMVALQN-LREE-----E--IERGED
Solenopsis_invicta	-----IEARNQNSSHSPQNDQDL--EMVALQD-LREE-----E--IEGEED
Pogonomyrmex_barbatus_X1	-----IEARNQNSSHSPQNDQDL--EMVALQD-LREE-----E--TEGEED
Vollenhovia_emeryi_X1	-----IEARNQNSSHSPQNDQDL--EMVPLQD-LPEE-----E--IEGEEN
Wasmannia_auropunctata	-----IEARNQNSSHSPQ-NEDL--EMVALQD-LREE-----E--MQG-ED
Cyphomyrmex_costatus	-----IEARNQNSSHSPQTDQDL--EMVTLLQD-LREE-----E--MEGEED
Trachymyrmex_septentrionalis	-----IEARNQNSSHSPQTDQDL--EMVALQEHRLREE-----E--MEGEED
Atta_colombica	-----IEARNQNSSHSPQTDQDL--EMVALQEHRLREE-----E--MEGEED
Trachymyrmex_cornetzi	-----IEARNQNSSHSPQTDQDL--EMVALQEHRLREE-----E--MEGEED
Acromyrmex_echinator	-----IEARNQNSSHSPQTDQDL--EMVALQERLREE-----E--MEGEED
Atta_cephalotes	-----IEARNQNSSHSPQTDQDL--EMVALQEHRLREE-----E--MEGEED

Drosophila_melanogaster	SPIAMVDDQGSHPFSLPSGFASSTPDGQTVMTAFQNPAAQGDISATYVVPDADALD
Halyomorpha_halys	LSSEL--QHGR-----
Rhodnius_prolixus	-----
Cimex_lectularius_X1	VPEEL--NCDTV-----
C.lectularius_X2	VPEEL--NCDTV-----
Cryptotermes_secundus	-----IFEDT-----
Miniopterus_natalensis	VPL----DRSSH-----
Callithrix_jacchus	VPL----DRSSH-----
Heterocephalus_glaber_X1	VPL----DRSSH-----
Dasypus_novemcinctus	VPL----DRSSH-----
Tupaia_chinensis_X2	VPL----DQSSH-----
Homo_sapiens_X1	VPL----DRSSH-----
Pongo_abelii_2	VPL----DRSSH-----
Pan_troglodytes_X2	VPL----DRSSH-----
Boleophthalmus_pectinirostris	IPL----DPSSY-----
Larimichthys_crocea_X2	IPL----DPSSY-----
Larimichthys_crocea	IPL----DPSSY-----
Lates_calcarifer	IPL----DPSSY-----
Seriola_lalandi_dorsalis	IPL----DPSSY-----
Seriola_dumerili	IPL----DPSSY-----
Zootermopsis_nevadensis	QHQRADDESIVF-----
Parasteatoda_tepidariorum	-----ESNDH-----
Onthophagus_nigriventris	MPLRLTKLEEEI-----
Nicrophorus_vespilloides	TPLRSNQDDENM-----
Tribolium_castaneum	TPLR---IAGDH-----
Nilaparvata_lugens	TPLRVTRDVEDF-----
Blattella_germanica	TPLRETRDVEDF-----

Nasonia vitripennis_X1	SPLRQ--DFGDF-----
Microplitis demolitor	LPLRE--DFGDF-----
Neodiprion lecontei	SPLRE--DFGDF-----
Athalia rosae	SPLRQ--DFGDF-----
Orussus abietinus	SPLRR--DFGDF-----
Dufourea novaeangliae	SPLRQ--DFGDF-----
Megachile rotundata_X1	SPLRQ--HFGDF-----
Melipona quadrifasciata	SPLRQ--DFGDF-----
Apis mellifera_X1	SPLRQ--DFGDF-----
Eufriesea mexicana_1	SPLRQ--DFGDF-----
Eufriesea mexicana_2	SPLRQ--DFGDF-----
Bombus terrestris	SPLRQ--DFGDF-----
Bombus impatiens	SPLRQ--DFGDF-----
Polistes dominula_X1	SPLRQ--DFGDF-----
Cephus cinctus_X1	SPLRQ--DFGDF-----
Dinoponera quadriceps_X2	SPLRQ--DFGDF-----
Harpegnathos saltator_X1	SPLRQ--DFGDF-----
Linepithema humile_X2	SPLRQ--DFGDF-----
Linepithema humile_X1	SPLRQ--DFGDF-----
Ooceraea biroi	SPLRQ--DFGDF-----
Camponotus floridanus	SPLRE--DFGDF-----
Solenopsis invicta	SPLRQ--DFGDF-----
Pogonomyrmex barbatus_X1	SPLRQ--DFGDF-----
Vollenhovia emeryi_X1	SPLRQ--DFGDF-----
Wasmannia auropunctata	SPLRQ--DFGDF-----
Cyphomyrmex costatus	SPLRQ--DFGDF-----
Trachymyrmex septentrionalis	SPLRQ--DFGDF-----
Atta colombica	SPLRQ--DFGDF-----
Trachymyrmex cornetzi	SPLRQ--DFGDF-----
Acromyrmex echinator	SPLRQ--DFDDF-----
Atta cephalotes	SPLRQ--DFGDF-----

Drosophila melanogaster	GDRGYEIIDPSPKCAELPTSRSGSTGGGKLSGEQHLLPRKGRQPTIMSSSMPDDVIGSS
Halyomorpha halys	-----ELT
Rhodnius prolixus	-----
Cimex lectularius_X1	-----ASC
C. lectularius_X2	-----ASC
Cryptotermes secundus	-----S-C
Miniopterus natalensis	-----S--
Callithrix jacchus	-----C-Q
Heterocephalus glaber_X1	-----C-Q
Dasypus novemcinctus	-----S-Q
Tupaia chinensis_X2	-----C-Q
Homo sapiens_X1	-----C-Q
Pongo abelii_2	-----C-Q
Pan troglodytes_X2	-----C-Q
Boleophthalmus pectinirostris	-----S-H
Larimichthys crocea_X2	-----S-Q
Larimichthys crocea	-----S-Q
Lates calcarifer	-----S-Q
Seriola lalandi dorsalis	-----S-H
Seriola dumerili	-----S-H
Zootermopsis nevadensis	-----PGN
Parasteatoda tepidariorum	-----DYS
Onthophagus nigriventris	-----Y-P
Nicrophorus vespilloides	-----S-S
Tribolium castaneum	-----DVN
Nilaparvata lugens	-----SLS
Blattella germanica	-----SLG
Nasonia vitripennis_X1	-----S-S
Microplitis demolitor	-----A-T
Neodiprion lecontei	-----A-S
Athalia rosae	-----A-S
Orussus abietinus	-----A-S
Dufourea novaeangliae	-----E-S
Megachile rotundata_X1	-----A-S
Melipona quadrifasciata	-----A-S
Apis mellifera_X1	-----A-S
Eufriesea mexicana_1	-----APS
Eufriesea mexicana_2	-----APS

Bombus_terrestris	-----A-S
Bombus_impatiens	-----A-S
Polistes_dominula_X1	-----A-S
Cephus_cinctus_X1	-----A-N
Dinoponera_quadriceps_X2	-----A-S
Harpegnathos_saltator_X1	-----A-S
Linepithema_humile_X2	-----A-S
Linepithema_humile_X1	-----A-S
Ooceraea_biroi	-----A-S
Camponotus_floridanus	-----A-S
Solenopsis_invicta	-----A-S
Pogonomyrmex_barbatus_X1	-----A-S
Vollenhovia_emeryi_X1	-----A-S
Wasmannia_auropunctata	-----A-S
Cyphomyrmex_costatus	-----A-S
Trachymyrmex_septentrionalis	-----A-S
Atta_colombica	-----A-S
Trachymyrmex_cornetzi	-----A-S
Acromyrmex_echinator	-----A-S
Atta_cephalotes	-----A-S

Drosophila_melanogaster	LQPSTASAASSNASSHTGRPSLKKTVADSVRNKANFINRHFLFNHKRTGSNASHKSNASNA
Halyomorpha_halys	ANTA-----
Rhodnius_prolixus	-----
Cimex_lectularius_X1	PSPT-----
C._lectularius_X2	PSPT-----
Cryptotermes_secundus	FQSC-----
Miniopterus_natalensis	-----
Callithrix_jacchus	REEA-----
Heterocephalus_glaber_X1	REEA-----
Dasypus_noveboracensis	RDEA-----
Tupaia_chinensis_X2	REEV-----
Homo_sapiens_X1	REEA-----
Pongo_abelii_2	REEA-----
Pan_troglodytes_X2	REEA-----
Boleophthalmus_pectinirostris	REGQ-----
Larimichthys_crocea_X2	REQC-----
Larimichthys_crocea	REQC-----
Lates_calcarifer	REQC-----
Seriola_lalandi_dorsalis	REQC-----
Seriola_dumerili	REQC-----
Zootermopsis_nevadensis	HQQQ--SVRDPNSL-----QLGMKHPSSVT--VP
Parasteatoda_tepidariorum	YFPS-----
Onthophagus_nigrirostris	LNSC-----
Nicrophorus_vespilloides	IASS-----
Tribolium_castaneum	FSLN-----
Nilaparvata_lugens	DDED-----
Blattella_germanica	GGSE-----
Nasonia_vitripennis_X1	FEPMT--RRKNGSSG-----HFGMEPFDTNSKSPT
Microplitis_demolitor	VEPS---CFKNSPDI-----RYDLKPYGDNSK-IP
Neodiprion_lecontei	FEPSPGPNISIKISSNP-----IYGATTRNDNSK-VS
Athalia_rosae	FEPAGPNISIKISSNP-----IYGATTRNENSK-VS
Orussus_abietinus	FEPT---SIKNSSTP-----RYGSELYGENSK-IP
Dufourea_novaeangliae	FEPS---SIKNSFSP-----HYRMDSYGENSK-TT
Megachile_rotundata_X1	FEPS---IVKNSFSP-----RYRADSYPGENSK-AT
Melipona_quadrfasciata	FEP---SIKNSFSP-----RFRMDSYGENSK-TT
Apis_mellifera_X1	FEPA---SIKNSFGS-----RFRMDSYGENSK-TT
Eufriesea_mexicana_1	FEPS---SIKNSFSP-----RYRMDSYGENSK-AT
Eufriesea_mexicana_2	FEPS---SIKNSFSP-----RYRMDSYGENSK-AT
Bombus_terrestris	FEPN---SIKNSFSP-----RFRMDSYGENSK-TN
Bombus_impatiens	FEPN---SIKNSFSP-----RFRMDSYGENSK-TN
Polistes_dominula_X1	FEPT---SIKNSLSP-----RY-TEPYGENSKTTT
Cephus_cinctus_X1	FEPT---SLKNSNS-----RYVTEPYGENSK-VS
Dinoponera_quadriceps_X2	FEPT---SIKDDTSP-----RY-INAYGENSK-AV
Harpegnathos_saltator_X1	FEPA---SIENNTSP-----RY-TNTYGENSK-VA
Linepithema_humile_X2	FEPC---NIKNTLSP-----RYGINSYGETSN-AT
Linepithema_humile_X1	FEPC---NIKNTLSP-----RYGINSYGETSN-AT
Ooceraea_biroi	FEPS---SIKNTLSP-----RYGIDSYGETSK-TT
Camponotus_floridanus	FEPC---SIKNNLSP-----HYGANSYGETS---T
Solenopsis_invicta	FEPR---SIKNNLSP-----QYEVDSFGETSK-AT

Pogonomyrmex\_barbatus\_X1  
Vollenhovia\_emeryi\_X1  
Wasmannia\_auropunctata  
Cyphomyrmex\_costatus  
Trachymyrmex\_septentrionalis  
Atta\_colombica  
Trachymyrmex\_cornetzi  
Acromyrmex\_echinatior  
Atta\_cephalotes

FEPC---SIKNNLSS-----RYAIGSYGETSK-AT  
FEPR---SIKNNLSP-----RYGADSYGETSK-AI  
FEPR---SIRNNLSP-----RYGADSYGESSK-AT  
FEPR---SIKNTISP-----RYGADSYGETSK-AT  
FEPR---S-KNTLSP-----RYGADSYGETSK-AT  
FEPR---S-KNTLSP-----RYGADSYGETSK-A-  
FEPR---S-KNTLSP-----RYGADSYGETSK-AT  
FEPR---S-KNTLSP-----RYGADSYGETSK-AT  
FEPR---S-KNTLSP-----RYGADSYGETSK-A-

Drosophila\_melanogaster  
Halyomorpha\_halys  
Rhodnius\_prolixus  
Cimex\_lectularius\_X1  
C.\_lectularius\_X2  
Cryptotermes\_secundus  
Miniopterus\_natalensis  
Callithrix\_jacchus  
Heterocephalus\_glaber\_X1  
Dasypus\_novemcinctus  
Tupaia\_chinensis\_X2  
Homo\_sapiens\_X1  
Pongo\_abelii\_2  
Pan\_troglodytes\_X2  
Boleophthalmus\_pectinirostris  
Larimichthys\_crocea\_X2  
Larimichthys\_crocea  
Lates\_calcarifer  
Seriola\_lalandi\_dorsalis  
Seriola\_dumerili  
Zootermopsis\_nevadensis  
Parasteatoda\_tepidariorum  
Onthophagus\_nigriventris  
Nicrophorus\_vespilloides  
Tribolium\_castaneum  
Nilaparvata\_lugens  
Blattella\_germanica  
Nasonia\_vitripennis\_X1  
Microplitis\_demolitor  
Neodiprion\_lecontei  
Athalia\_rosae  
Orussus\_abietinus  
Dufourea\_novaeangliae  
Megachile\_rotundata\_X1  
Melipona\_quadrifasciata  
Apis\_mellifera\_X1  
Eufriesea\_mexicana\_1  
Eufriesea\_mexicana\_2  
Bombus\_terrestris  
Bombus\_impatiens  
Polistes\_dominula\_X1  
Cephus\_cinctus\_X1  
Dinoponera\_quadriceps\_X2  
Harpegnathos\_saltator\_X1  
Linepithema\_humile\_X2  
Linepithema\_humile\_X1  
Ooceraea\_biroi  
Camponotus\_floridanus  
Solenopsis\_invicta  
Pogonomyrmex\_barbatus\_X1  
Vollenhovia\_emeryi\_X1  
Wasmannia\_auropunctata  
Cyphomyrmex\_costatus  
Trachymyrmex\_septentrionalis  
Atta\_colombica  
Trachymyrmex\_cornetzi  
Acromyrmex\_echinatior  
Atta\_cephalotes

PSTSSNTNLTSHPVAMGNLGTIES-----GGSGSAGSYTGTPRFYTPSATPGGGSGMA  
--S--FHTANENTAL-----YGPI-----  
-----  
--N-----LMD-----  
-----NLMD-----  
-----ERTERFDSPL-----LSGEFNSLVPEKRTSASVN  
--Q--REDDGGSSLGRK--RSYED-----  
-----GGRDGGSSLGLK--RSYDE-----  
-----GGREGGSSLGIK--RNYEE-----  
-----GGRDGGSSLGLK--RNYEE-----  
-----GGRDGGSSLGLK--RNYEE-----  
-----GGRDGGSSLGFK--RSYEE-----  
-----GGRDGGSSLGFK--RSYEE-----  
-----GGRDGGSSLGFK--RSYEE-----  
--S--LDRDEAASMGLL--GSYEE-----  
-----LDRDEAASMGLR--GSYEE-----  
-----LDRDEAASMGLR--GSYEE-----  
-----LDRDEAASMGLR--GSYEE-----  
-----LDRDEAASMGLR--GSYEE-----  
P-N--RHEISDSYVLPEHLPGFPETEHVLYGPGSDFTLQHNSFETAPLKRTSGTGSSVIR  
-----ATMLPEE-----DEAEEIVNGGELVEATIS-SVDELRTVHVNSN-----  
-----ADDSEV-----EDDLVGSP-----  
-----DSSEE-----  
-----SDDSN-----DEFET-----  
--D--YEPHLPAPAPAP-----ATDTKVSNGSATAPTP  
-----EEEDDLDPADVE--VGYP-----HYHTMSVP-----  
SLALGFLDLNSSKAPLK--AGFDD----FDGVSVGLAS-SKDTLNLFFAEDSVKPAKN  
A-S--FHDLNSSKIPLK--AGFDD----FDGVSVGLCS-SKDTLNLFFAEDSLKSVKN  
P-N--FHEFNSSKVPLK--ADFDD----FEGASMESLRS-SRDTLDLPFAEDSLKSVKN  
P-N--FHEFNSSKVPLK--ADFED----FEGASMESLRS-SRDTLDLPFAEDSLKSVKN  
S-A--FHDLPSSKIPLK--AGFED----FDDVSAESMSS-SKDTLNLFFAEDSLKSVKS  
NMN--SHMNSSNVPLK--AGFDD----FDGVSAGSIAS-GKDTLNLFFVEDSLKSVKS  
A-T--CQDFNSSNVPLK--AVFDD----FDGVSADSVIS-GKDALNLFFVEDSFKSVKS  
T-N--CHDMNSSNVPLK--AGFDD----FDGVSADSIAS-GKDVNLNLPFFVEDSLKSVKS  
P-N--CHDMNSSNVPLK--AGFDD----FDGVSADSIASIAKDALNLNLPFFVEDSLKSVKS  
S-N--CHDMNSSNVPLK--AGFDD----FDGVSADSVAS-GKDALNLNLPFFVEDSLKSVKS  
S-N--CHDMNSSNVPLK--AGFDD----FDGVSADSVAS-GKDALNLNLPFFVEDSLKSVKS  
S-N--CHDMNSSNVPLK--AGFDD----FDGVSADSIAS-GKDVNLNLPFFVEDSLKSVKS  
S-N--CHDMNSSNVPLK--AGFDD----FDGVSADSIAS-GKDVNLNLPFFVEDSLKSVKS  
T-N--FHDLNLSKIPLK--AGFDD----FDGISGDSLAS-SKDTLNLNLPFFVEDSLKSVKN  
R-T--FHDNLSSKVPLK--AGFDD----FDGVSGLSLAS-SKDTLNLNLPFAEESLNSVRN  
S-S--FHDNMSSKVPLK--AGFDD----FDGVSGLSLAS-SKDTLNLNLPFFVEDSLKSVKS  
S-T--FHDNMSSKVPLK--AGFDD----FDGISGDSLAS-SKDTLNLNLPFFVEDSLKSVKS  
S-N--FHDMNSSEVP-K--AGFDE----FGGISGDSLVS-N-----  
S-N--FHDMNSSEVP-K--AGFDE----FGGISGDSLVS-SKDTLNSPYVEGSLKSVRS  
P-D--FHDMNCSKIPLK--AGFED----FDGVSGLSL-S-SKDTLNLNLPFFVEDSLKSVKS  
S-N--FHDMNSSKVP-K--AGFDE----FVGVSGLSLVS-SKDTLNSPFFIEGSLKSVRS  
S-N--FHDMNSTKVP-K--AGFDE----FGGISGDSLVS-SKDTLNSPFFV-GLSKSV-S  
S-N--FHDMNSIKVP-K--AGFDE----FVGVSGLSLVS-SKDTLNSPFFVEGSLKSVRS  
S-N--FHDMNSTKVP-K--AGFDE----FGGISGDSLVS-SKDTLNSPFFVEGSLKSVRS  
S-N--FHDMSSIKVP-K--AGFDE----FGGISGDSLVS-SKDTLNSPFFVEGSLKSVRS  
S-N--FHDMNSIKVP-K--AGFDE----FGGISGDSLVS-SKDTLNLNLPFFVEGSLKSIRS  
S-N--FHDMNSIKVP-K--AGFDE----FGGISGDSLVS-SKDTLNSPFFVEGSLKSVRS  
S-N--FHDMNSIKVP-K--AGFDE----FGGISGDSLVS-SKDTLNSPFFVEGSLKSVRS  
S-N--FHDMNSIKVP-K--AGFDE----FGGISGDSLVS-SKDTLNSPFFVEGSLKSVRS  
S-N--FHDMNSIKVP-K--AGFDE----FGGISGDSLVS-SKDTLNSPFFVEGSLKSVRS

Drosophila_melanogaster	ISDNPNYRLLEDSEIASEQATILTTSSPNPNYEMMHPPTSLVSTNPNYMPMNETPVQMAGV
Halyomorpha_halys	-----
Rhodnius_prolixus	-----
Cimex_lectularius_X1	-----
C._lectularius_X2	-----
Cryptotermes_secundus	SNMETLPNNSRSSIA-----
Miniopterus_natalensis	-----
Callithrix_jacchus	-----
Heterocephalus_glaber_X1	-----
Dasypus_novemcinctus	-----
Tupaia_chinensis_X2	-----
Homo_sapiens_X1	-----
Pongo_abelii_2	-----
Pan_troglodytes_X2	-----
Boleophthalmus_pectinirostris	-----
Larimichthys_crocea_X2	-----
Larimichthys_crocea	-----
Lates_calcarifer	-----
Seriola_lalandi_dorsalis	-----
Seriola_dumerili	-----
Zootermopsis_nevadensis	KASQLIPQTGYGLLDNEYSQPENIDPTIPSQVTSDDSCSKILFAGLG--DGYPDENILPK
Parasteatoda_tepidariorum	-----DG-----
Onthophagus_nigriiventris	-----
Nicrophorus_vespilloides	-----
Tribolium_castaneum	-----
Nilaparvata_lugens	NGFIRRP-----
Blattella_germanica	-----RKLSTPPNGIV-----
Nasonia_vitripennis_X1	SPFAQKKSSSKGNVS--QSSAGKSSL-SPQSPSIIATTGNLGSKPS--PSLV-----SS
Microplitis_demolitor	SPSIKNNSTNRRNIS---PLSSKNSLSPQ-NKR---NQIILNRNG--QNK-----SV
Neodiprion_lecontei	SPFVDKRNNSRVNSTGDNVSLGKNSI-NPN-NVV---KRNFSSESPR--F-----SK
Athalia_rosae	SPFVEKKNNSRGNLS--DGSIGK-TL-SPG-SIA---RKNFLETPR--F-----ST
Orussus_abietinus	SPFSERKTPSRNAS--LASTA-KST-SPR-SMT---KSAFFESPE--A-----PK
Dufourea_novaeangliae	SPFMNAKSSSRSNIS--QLSVDNKSI-SPRNAG---KRSYLNSPN--S-----SK
Megachile_rotundata_X1	SPFATAKSVSRNLS--QLSTGNRSA-SPKSTG---KRSFLSSPN--S-----SR
Melipona_quadrifasciata	SPFINAKSISRNLNLS--QLSISNRSA-SPKNHSG---RRSFLSSPN--S-----SK
Apis_mellifera_X1	SPFINAKSASRNLS--QLSTNRSATSPKNPSG---KRSFLGSPN--S-----SK
Eufriesea_mexicana_1	SPFINAKSASRNLS--QLSISNKSG-SPKNPS---KRSFLSSPN--S-----SK
Eufriesea_mexicana_2	SPFINAKSASRNLS--QLSISNKSG-SPKNPS---KRSFLSSPN--S-----SK
Bombus_terrestris	SPFINAKSTSRNLNLS--QLSISNRSG-SPKNPS---KRSFLSSPN--S-----SK
Bombus_impatiens	SPFINAKSTSRNLNLS--QLSISNRSG-SPKNPS---KRSFLSSPN--S-----SK
Polistes_dominula_X1	SPFIHAKSTSKGIDN--QTSTG-RAT-SLQ-NLI---KQHIQQQQR--TQEDSPISIKSK
Cephus_cinctus_X1	SPFAEKRTSRGNIS--QISVG-KSL-TPQ-TGN---KRVFLESPPG--L-----SR
Dinoponera_quadricaps_X2	SPFIHNKSTSRN-----SE-SLV-----
Harpegnathos_saltator_X1	SPFIQNKSTSRSNVS--YVSLG-KSA-SPQ-SLV---KRNFLDSPN--P-----SC
Linepithema_humile_X2	-----
Linepithema_humile_X1	SPFIYKKSTSRSNIS--QASLG-KSV-SPQ-GLV---RQNFLDSPN--S-----SK
Ooceraea_biroi	SPFIHTKSASRNVS--QASLA-KSA-SPQ-SKV---KQNFLDSPN--L-----SK
Camponotus_floridanus	SPFIYKKSTSRSNVS--QGSVL-KSG-SPQ-SLV---KRYFLDSPN--L-----PK
Solenopsis_invicta	SPFIYKKSTSRGNVS--QSSLG-KSA-SPQ-SLV---KRNFLDSPN--P-----SK
Pogonomyrmex_barbatus_X1	SPFIYKKSTSRSNIS--QSSLG-KPG-SPPGSLV---KRSFLDSPN--P-----SK
Vollenhovia_emeryi_X1	SPFIYKKSTSRSNVS--QGSGL-KPA-SPQ-SLV---KRHFFDSPN--L-----SK
Wasmannia_auropunctata	SPFIYKKSTSRSNVS--QGSGL-KPG-SPQ-SLV---KRNFLDSPN--P-----SK
Cyphomyrmex_costatus	SPFIYKKSTSRSNVS--QGSGL-KPG-SPQ-SLV---KRNFLDSPN--P-----SK
Trachymyrmex_septentrionalis	SPFIYKKSTSRSNVS--QGSGL-KSG-SPQ-SLV---KRNFLDSPN--P-----SK
Atta_colombica	SPFIYKKSTSRSNVS--QGSGL-KSG-SPQ-SLV---KRNFLDSPN--P-----SK
Trachymyrmex_cornetzi	SPFIYKKSTSRSNVS--QGSGL-KSG-SPQ-SLV---KRNFLDSPN--P-----SK
Acromyrmex_echinatior	SPFIYKKSTSRSNVS--QGSGL-KSG-SPQ-SLV---KRNFLDSPN--P-----SK
Atta_cephalotes	SPFIYKKSTSRSNVS--QGSGL-KSG-SPQ-SLV---KRNFLDSPN--P-----SK

Drosophila_melanogaster	TISHNPNYQPMQAPLNARQSQSSSDEDEDEDEDDDDVDDHVEHIKMERMLSRPR
Halyomorpha_halys	-----
Rhodnius_prolixus	-----
Cimex_lectularius_X1	-----
C._lectularius_X2	-----
Cryptotermes_secundus	----EPHYLMCKRTS-----
Miniopterus_natalensis	-----HISYTHMN-----
Callithrix_jacchus	-----HIPYTHMN-----
Heterocephalus_glaber_X1	-----HIPYTHMN-----
Dasypus_novemcinctus	-----HIPYTHMN-----
Tupaia_chinensis_X2	-----HIPYTHMN-----

Homo_sapiens_X1	-----HIPYTHMN-----
Pongo_abelii_2	-----HIPYTHMN-----
Pan_troglodytes_X2	-----HIPYTHMN-----
Boleophthalmus_pectinirostris	-----HHMPFTHMN-----
Larimichthys_crocea_X2	-----HHIPFTHMN-----
Larimichthys_crocea	-----HHIPFTHMN-----
Lates_calcarifer	-----HHIPFTHMN-----
Seriola_lalandi_dorsalis	-----HHIPFTHMN-----
Seriola_dumerili	-----HHIPFTHMN-----
Zootermopsis_nevadensis	THSEECDLHSSVS AVRTQDCAP-----SENNSVEGDTR-LQAQGSKCPVATVSSGN
Parasteatoda_tepidarium	SKGVSVNYS DSGSKGSKISTLSN-----
Onthophagus_nigriiventris	-----HMEFSSYPKVQKDTT-----
Nicrophorus_vespilloides	-----EELEPDTNIEFITY-----
Tribolium_castaneum	-----DAETHIRFSPIPVENKDG-----
Nilaparvata_lugens	-----
Blattella_germanica	-----GNGSAATS-----
Nasonia_vitripennis_X1	TRS-DPEYENRSPEAV---DQL-----QQQPPTRDVAS-LRVSFPSMDAIDSDET
Microplitis_demolitor	HNIDLDYENQSTELM---SNA-----EM---KDINS-TQLDYSSLDNVDVTISV
Neodiprion_lecontei	IKSEDPDYENKSPEV-FV-TSGD-----TI---KNTNV-HRVEFPSIDGID-DKNI
Athalia_rosae	IKTEDPDYENKIPEVVLSTSGD-----QI---KDSNI-RRIEFPSIDVE-DKNI
Orussus_abietinus	PRG-NSDYENRSPERV---SL-----NA---KNAST--RIEIVDINDVVDDQK
Dufourea_novaeangliae	I-A-NPDYENGSP EIL---SAA-----EK---KETVP-LRVDFPSMDAIGIDHEI
Megachile_rotundata_X1	LAN-LPDYENGSP EIL---PAV-----NK---RETMP-LRVDFPSMDAIDVDNRL
Melipona_quadri-fasciata	L-I-NPDYENGSP EIL---LAA-----EK---RDTVP-LRVDFPSAID-IDV----
Apis_mellifera_X1	IAA-NPDYENGSP EIL---SAAA-----EK---RETV-LRLDFPSIDAIDIDNGM
Eufriesea_mexicana_1	L-A-NPDYENGSP EIL---AVA-----EK---RETV-LRVDFPSIDAIDIDNGM
Eufriesea_mexicana_2	L-A-NPDYENGSP EIL---AVA-----EK---RETV-LRVDFPSIDAIDIDNGM
Bombus_terrestris	L-V-NPDYENGSP EIL---SAA-----EK---REAVP-LRVDFPSMDTINIDNGM
Bombus_impatiens	L-V-NPDYENGSP EIL---SAA-----EK---REAVP-LRVDFPSMDTINIDNGM
Polistes_dominula_X1	SKK-NPDYENSSPMIL---ANY-----ER---N----FSFPSLSLNTLEIDVDI
Cephus_cinctus_X1	TRY-APDYENHSPEFI---NDE-----NN---KDAIP-LRIDFPSMEAI DDDEPE
Dinoponera_quadriciceps_X2	-----
Harpegnathos_saltator_X1	KPRGNPDYENRSPEIM---LGL-----EK---KETAP-MHVNFP SMDAIDIDING
Linepithema_humile_X2	-----
Linepithema_humile_X1	PQS-DPDYEN-SPEIM---SGL-----EK---K-ISP-LHIEFASMDATDIEING
Ooceraea_biroi	SRNLDPDYENKSSEII---SGS-----AK---KETAP-LHVKFPSVDEM DIEING
Camponotus_floridanus	SRG-DPDYENRSPE TI---LAI-----EK---REITTPHVEFPSVDVMDIQING
Solenopsis_invicta	LRD-DPDYENRSLEII---SGI-----EK---KEIIS-LHVEFPSVDVMDIQING
Pogonomyrmex_barbatus_X1	FRD-DPDYENRSPEIM---SSI-----EK---KEITS-LHVEFPSMDVIDIQING
Vollenhovia_emeryi_X1	FRD-DPDYENRSPEIM---SGI-----EK---KEITS-LHVEFPSVDVMDIQING
Wasmannia_auropunctata	RRD-DPDYENRSPEIM---SGV-----EK---KEITS-LHVEFPSVDVMDIQING
Cyphomyrmex_costatus	LRD-DPDYENRSPEIM---SGI-----EK---KEITS-LHVEFPSVDVMDIQING
Trachymyrmex_septentrionalis	LQD-DPDYENRSPEIM---SGI-----EK---REITS-LHVEFPSVDV---QING
Atta_colombica	LQD-DPDYENRNPEIM---SGI-----EK---REITS-LHVEFPSVDV---QING
Trachymyrmex_cornetzi	LQD-DPDYENRSPEIM---SGI-----EK---REITS-LHVEFPSVDV---QING
Acromyrmex_echinatior	LQD-DPDYENRSPEIM---SGI-----EK---REITS-LHVEFPSMDV---QVNG
Atta_cephalotes	LQD-DPDYENRSPEIM---SGI-----EK---REITS-LHVEFPSVDV---QING
Drosophila_melanogaster	QRALPSKTQPPRSRSVSQTRKSPTNPNSGIGATGAGNRSNLLKENWLRPASTPRPPPPNG
Halyomorpha_halys	-----
Rhodnius_prolixus	-----
Cimex_lectularius_X1	-----
C._lectularius_X2	-----
Cryptotermes_secundus	-----RFNADE
Miniopterus_natalensis	-----GGKKNG
Callithrix_jacchus	-----GGKKNG
Heterocephalus_glaber_X1	-----GGKKNG
Dasypus_novemcinctus	-----GGKKNG
Tupaia_chinensis_X2	-----GGKKNG
Homo_sapiens_X1	-----GGKKNG
Pongo_abelii_2	-----GGKKNG
Pan_troglodytes_X2	-----GGKKNG
Boleophthalmus_pectinirostris	-----GGKSNG
Larimichthys_crocea_X2	-----GGKTNG
Larimichthys_crocea	-----GGKTNG
Lates_calcarifer	-----GGKTNG
Seriola_lalandi_dorsalis	-----GGKTNG
Seriola_dumerili	-----GGKTNG
Zootermopsis_nevadensis	RAIP-----SSKDSFKGDDGN-----KSKPRFP-----NGMVNG
Parasteatoda_tepidarium	-----GSIANG

Onthophagus_nigriventris	-----TGTANG
Nicrophorus_vespilloides	-----TSTANG
Tribolium_castaneum	-----ITTANG
Nilaparvata_lugens	-----PAANGN
Blattella_germanica	-----PTAANG
Nasonia_vitripennis_X1	IPETTSSIVVDSNSSSATLPsAKQQ-----YAN--KSGEQQAAPLNNG
Microplitis_demolitor	-----QEAEPOS--QTD-----YLE--KC-----ESLNNG
Neodiprion_lecontei	-----NDNGGNKS-KVD-----YKSNNKQ-----EGLNNG
Athalia_rosae	-----NEIGGNKS-KVD-----YKS--KP-----ETLNNG
Orussus_abietinus	-----EKS-----PVE-----YVN--RS-----ETLNNG
Dufourea_novaeangliae	-----EKKDTI-P-ITD-----YVN--KP-----ETLNNG
Megachile_rotundata_X1	-----EKKETF-S-DSD-----FTN--KS-----ENLNNG
Melipona_quadrfasciata	-----ETNEPL-S-PVE-----YVN--KP-----EALNNG
Apis_mellifera_X1	-----ERKEALSS-PVE-----YVN--KP-----ETLNNG
Eufriesea_mexicana_1	-----EKKETL-S-PVE-----YVN--KP-----ETLNNG
Eufriesea_mexicana_2	-----EKKETL-S-PVE-----YVN--KP-----ETLNNG
Bombus_terrestris	-----EKKEMK-S-PVE-----YVN--KP-----ETLNNG
Bombus_impatiens	-----EKKEMK-S-PVE-----YVN--KP-----ETLNNG
Polistes_dominula_X1	-----EGKDRRHSPRVE-----YMN--EP-----ETLNNG
Cephus_cinctus_X1	-----VRKDIKKA-QAE-----YMN--KP-----ETLNNG
Dinoponera_quadriceps_X2	-----
Harpegnathos_saltator_X1	-----DKSESks--MGG-----YVN--KP-----ETLNNG
Linepithema_humile_X2	-----
Linepithema_humile_X1	-----DKKDSKY--TAD-----YVN--KP-----ETLNNG
Ooceraea_biroi	-----EKNESKH--AGE-----YVN--KP-----ETLNNG
Camponotus_floridanus	-----DKKETK--TTD-----YVN--KS-----ETLNNG
Solenopsis_invicta	-----NKTENNKKHTGD-----YMN--KS-----ETLNNG
Pogonomyrmex_barbatus_X1	-----DKKESNKH-MSD-----YMN--KS-----ETLNNG
Vollenhovia_emeryi_X1	-----DKTENNKR-TGD-----YMN--KS-----ETLNNG
Wasmannia_auropunctata	-----DKTENNKRTGD-----YMN--KS-----EILNNG
Cyphomyrmex_costatus	-----DKTENNKR-TGD-----YIN--KS-----EILNNG
Trachymyrmex_septentrionalis	-----DKTENNKR-MGD-----YMN--KS-----EMLNNG
Atta_colombica	-----DKTENNKR-TGD-----YMN--KS-----EMLNNG
Trachymyrmex_cornetzi	-----DKTENNKR-TGD-----YMN--KS-----EMLNNG
Acromyrmex_echinator	-----DKTENNKR-TGD-----YMN--KS-----EMLNNG
Atta_cephalotes	-----DKTENNKR-TGD-----YMN--KS-----EMLNNG

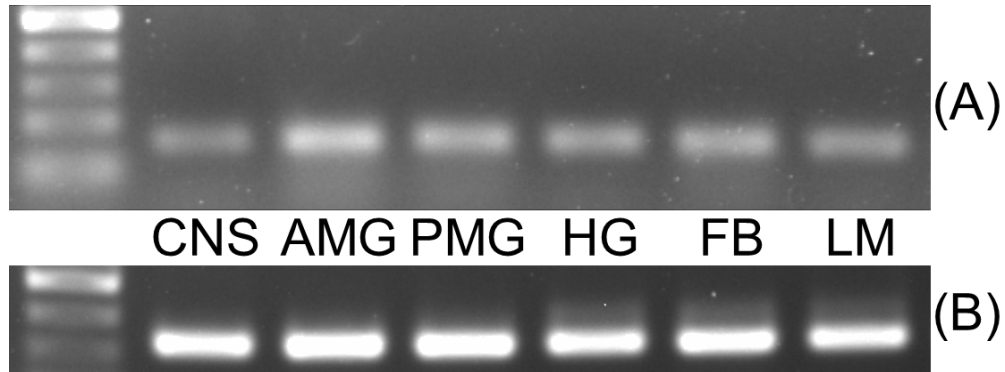
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Halyomorpha_halys	-----
Rhodnius_prolixus	-----
Cimex_lectularius_X1	-----
C._lectularius_X2	-----
Cryptotermes_secundus	YILG-----
Miniopterus_natalensis	RVLTLPSSPS-----
Callithrix_jacchus	RILALPRSNPS-----
Heterocephalus_glaber_X1	RILPLPRSSPS-----
Dasyus_novemcinctus	RILTLPASNPS-----
Tupaia_chinensis_X2	RILTLPASNPS-----
Homo_sapiens_X1	RILTLPASNPS-----
Pongo_abelii_2	RILTLPASNPS-----
Pan_troglodytes_X2	RILTLPASNPS-----
Boleophthalmus_pectinirostris	RILALPRSTPS-----
Larimichthys_crocea_X2	RILALPRSSPS-----
Larimichthys_crocea	RILALPRSSPS-----
Lates_calcarifer	RILALPRSSPS-----
Seriola_lalandi_dorsalis	RILALPRSSPS-----
Seriola_dumerili	RILALPRSSPS-----
Zootermopsis_nevadensis	YISLPQEDGNECVPLK-----
Parasteatoda_tepidarium	HAYCAKSN-----
Onthophagus_nigriventris	YVGTNPSNGTRA-----
Nicrophorus_vespilloides	FVGANK-----
Tribolium_castaneum	YVSGCPTNGAATTQC-----
Nilaparvata_lugens	SVNVKTTKC-----
Blattella_germanica	WVVGNGTGMKTTQC-----
Nasonia_vitripennis_X1	YIGGPAT-----
Microplitis_demolitor	YISRTTT-----
Neodiprion_lecontei	YISGKTTQC-----
Athalia_rosae	YISGKTTQC-----
Orussus_abietinus	YIGGATT-----
Dufourea_novaeangliae	YIGGTTT-----

Megachile_rotundata_X1	YIGGATT-----
Melipona_quadrifasciata	YIGGTATKQLTLRPCASSYAYTAL
Apis_mellifera_X1	YIGGTTT-----
Eufriesea_mexicana_1	YIGSTTT-----
Eufriesea_mexicana_2	YIGSTTT-----
Bombus_terrestris	YISSTTT-----
Bombus_impatiens	YISGTTT-----
Polistes_dominula_X1	YIGGNNKKT-----
Cephus_cinctus_X1	YIGGAAT-----
Dinoponera_quadriceps_X2	-----
Harpegnathos_saltator_X1	YIGNTTT-----
Linepithema_humile_X2	-----
Linepithema_humile_X1	YIGNTTT-----
Ooceraea_biroi	YIGNTTT-----
Camponotus_floridanus	YIGNTAT-----
Solenopsis_invicta	YIGSTTT-----
Pogonomyrmex_barbatus_X1	YIGNTAT-----
Vollenhovia_emeryi_X1	YIGNTAT-----
Wasmannia_auropunctata	YIGNTTT-----
Cyphomyrmex_costatus	YISNTTT-----
Trachymyrmex_septentrionalis	YISNTTT-----
Atta_colombica	YISNTTT-----
Trachymyrmex_cornetzi	YISNTTT-----
Acromyrmex_echinatior	YISNTTT-----
Atta_cephalotes	YISNTTT-----



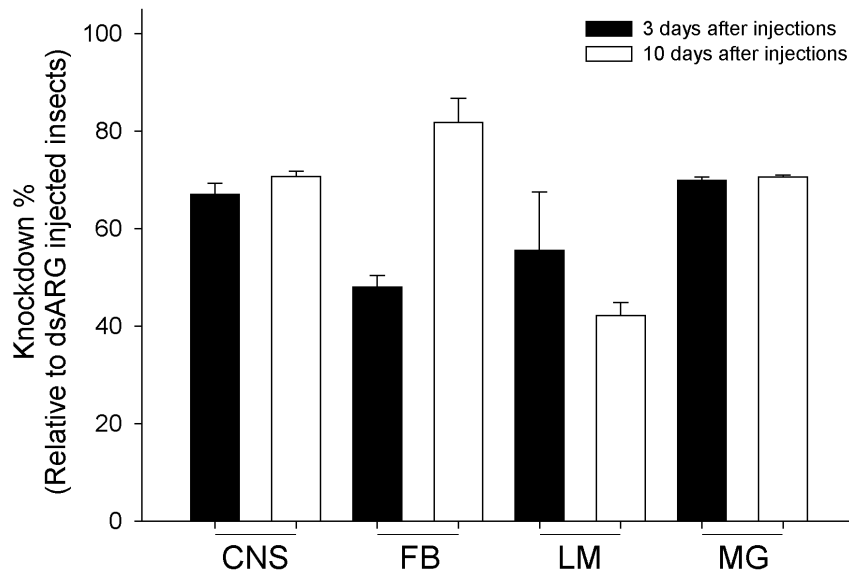
**Supplementary Figure 2. Multiple alignment of insulin receptor sequences.** Rhop-IR predicted aminoacid sequence (RPRC006251-PA) was aligned with 57 sequences of insulin receptors from 54 other species.

Vertebrate (*Larimichthys crocea* XP\_019121818.1 and KKF23242.1, *Boleophthalmus pectinirostris* XP\_020784849.1, *Lates calcarifer* XP\_018533362.1, *Seriola lalandi dorsalis* XP\_023281132.1, *S. dumerili* XP\_022614011.1, *Pongo abelii* PNJ04174.1, *Pan troglodytes* XP\_016790340.1, *Dasyus novemcinctus* XP\_004477219.1, *Miniopterus natalensis* XP\_016072913.1, *H. sapiens* XP\_011526290.2, *Tupaia chinensis* XP\_014440404.1, *Callithrix jacchus* XP\_017823137.1, *Heterocephalus glaber* XP\_004865373.1) and invertebrate (*Cimex lectularius* XP\_014242610.1 and XP\_014242611.1, *Halyomorpha halys* XP\_014273072.1, *Zootermopsis nevadensis* KDR21367.1, *Trachymyrmex septentrionalis* XP\_018338965.1, *Atta colombica* KYM81501.1, *A. cephalotes* XP\_012056411.1, *Trachymyrmex cornetzi* KYN13503.1, *Camponotus floridanus* XP\_011251747.1, *Bombus terrestris* XP\_003393794.1, *B. impatiens* XP\_003490625.1, *Blattella germanica* CDI30232.1, *Cyphomyrmex costatus* KYN02366.1, *Acromyrmex echinator* XP\_011051139.1, *Wasmannia auropunctata* XP\_011696537.1, *Vollenhovia emeryi* XP\_011864734.1, *Ooceraea biroii* XP\_011347281.1, *Cryptotermes secundus* PNF38775.1, *Dinoponera quadricaps* XP\_014476872.1, *Microplitis demolitor* XP\_014295647.1, *Linepithema humile* XP\_012228696.1 and XP\_012228695.1, *Neodiprion lecontei* XP\_015510416.1, *Pogonomyrmex barbatus* XP\_011648404.1, *Eufriesea mexicana* XP\_017754627.1 and XP\_017756280.1, *Orussus abietinus* XP\_023289633.1, *Athalia rosae* XP\_012260906.2, *Harpegnathos saltator* XP\_011144146.1, *Solenopsis invicta* XP\_011158641.1, *Melipona quadrifasciata* KOX70962.1, *Polistes dominula* XP\_015177172.1, *Dufourea novaeangliae* XP\_015431438.1, *Megachile rotundata* XP\_012136521.1, *Nasonia vitripennis* XP\_016838980.1, *Nicrophorus vespilloides* XP\_017772616.1, *Parasteatoda tepidariorum* XP\_015920989.1, *D. melanogaster* AAC47458.1, *O. nigriventris* AFQ20827.1, *Tribolium castaneum* AHF20214.1, *Nilaparvata lugens* AIY24638.1, *Apis mellifera* XP\_016773490.1) sequences were used. The region highlighted in yellow represents the extracellular portion of the receptor comprising the leucine-and cysteine-rich domains. The region highlighted in red indicates the intracellular tyrosine kinase domain, which was used to construct the phylogenetic tree. An asterisk (\*) indicates positions that have a single, fully conserved aminoacid residue, a colon (:) indicates conservation between aminoacid groups of strongly similar properties, and a period (.) indicates conservation between aminoacid groups of weakly similar properties.



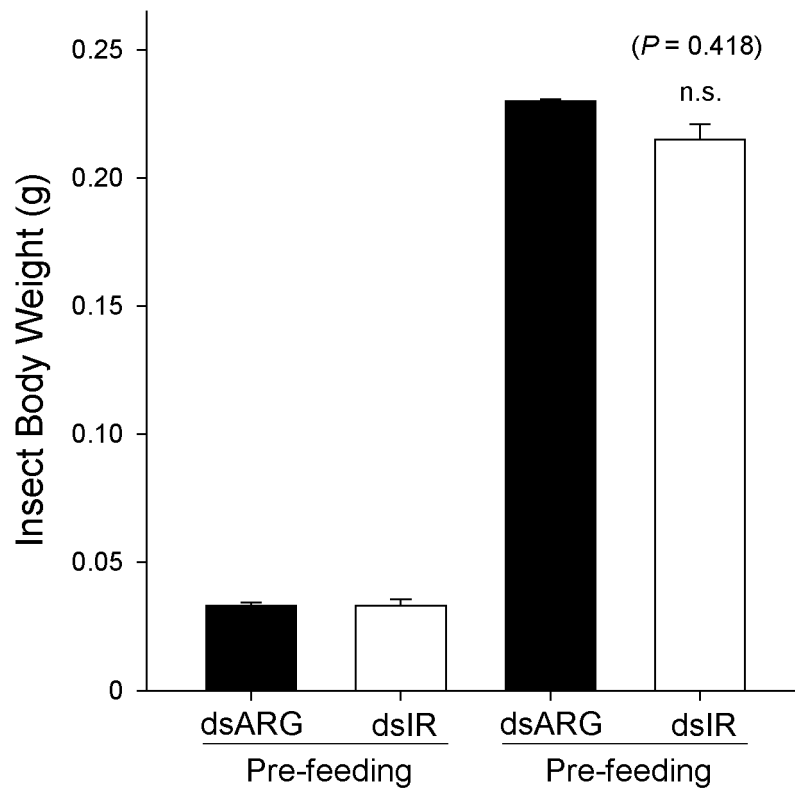
**Supplementary Figure 3. Semi-quantitative analysis of Rhopr-IR transcript expression in 5<sup>th</sup> instars.**

Unfed 5<sup>th</sup> instar *R. prolixus* were dissected and tissues were pooled into 6 different groups (CNS – central nervous system, AMG – anterior midgut, PMG – posterior midgut, HG – hindgut, FB – fat body, LM – leg muscles). (A) indicates Rhopr-IR transcript amplification and (B) indicates actin transcript amplification, which was used as a reference control. The experiment was repeated 3 times.



**Supplementary Figure 4. Analysis of Rhopr-IR transcript expression in 5<sup>th</sup> instars post dsRNA injection.**

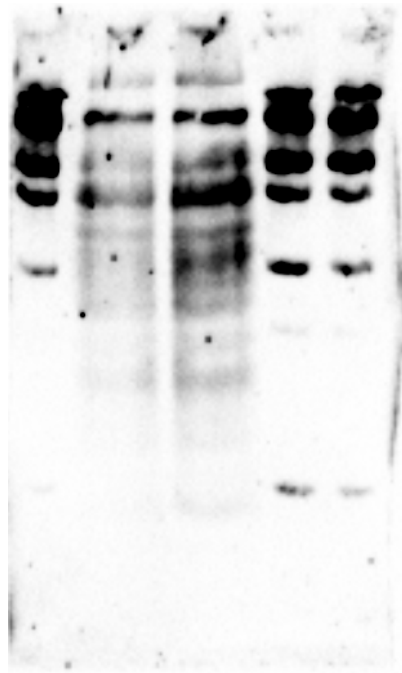
The double stranded RNAs for Rhopr-IR(dsIR) and Ampicilin Resistance Gene (dsARG) were injected into unfed 5<sup>th</sup> instar *R. prolixus* and insects were dissected at 3 and at 10 days post-injections. Tissues were pooled into 4 different groups (CNS – central nervous system, FB – fat body, LM – leg muscles, MG – midgut) and the expression of Rhopr-IR in dsIR-injected insects was quantified relative to the expression of Rhopr-IR in dsARG-injected insects by using qPCR and the  $\Delta\Delta C_t$  method (Pfaffl, 2001). The experiment was repeated 3 times and results are shown as means + std error.



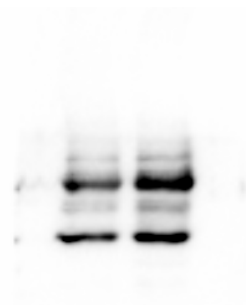
**Supplementary Figure 5. Post-feeding body weight of Rhopr-IR knockdown insects.** 5<sup>th</sup> instar *R. prolixus* were injected with 1 µg of dsARG or dsIR in 1 µL of ultrapure water and fed on defibrinated rabbit blood 3 days after injections. Insects were fed in groups of 40 individuals and allowed to feed for 25 minutes. Results are shown as means + std errors and the experiment was repeated for a total of 3 times. No statistical difference in post-feeding body weight was observed between dsARG- and dsIR-injected insects.

## Supplemental Data – Full Western blots

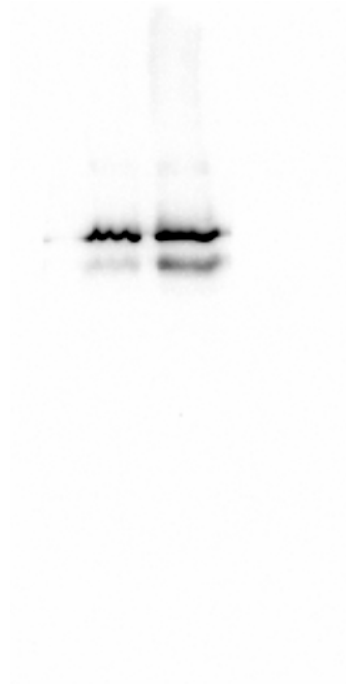
i. Figure 4, *BpV* vs. Saline – Western blots probing for pTyr (a), actin (b), Akt (c), and pAkt (d)



(a) Image displays chemiluminescent detection of anti-pTyr, using an anti-pTyr antibody, for blot shown in Figure 4. Some epitopes of proteins found within the ladders (lanes 1, 4 and 5) were also detected; it is possible that some of the proteins used in these ladders contain pTyr sites (information on proteins contained in protein ladders not disclosed by manufacturer).



(b) Image displays chemiluminescent detection of anti-actin, using an anti-B-actin primary antibody, for blot shown in Figure 4. Multiple bands observed, potentially as a result of different actin homolog variants within insects, or due to the detection of similar epitopes within different insect proteins. Bottom set of bands used as actin controls in Figure 4, based on MW identification of typical actin protein size in mammals (~42 kDa). Ladder not shown.



(c) Image displays chemiluminescent detection of anti-Akt, using an anti-Akt primary antibody, for blot shown in Figure 4. Multiple bands observed, potentially as a result of the detection of different Akt homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Top set of bands used as Akt protein signal, based on MW identification of typical Akt protein size in mammals (~60 kDa). Ladder not shown.



(d) Image displays chemiluminescent detection of anti-pAkt, using an anti-pAkt primary antibody, for blot shown in Figure 4. Multiple bands observed, potentially as a result of the detection of different pAkt homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Bottom set of bands used as pAkt protein signal, based on MW identification of typical pAkt protein size in mammals (~60 kDa). Ladder not shown.

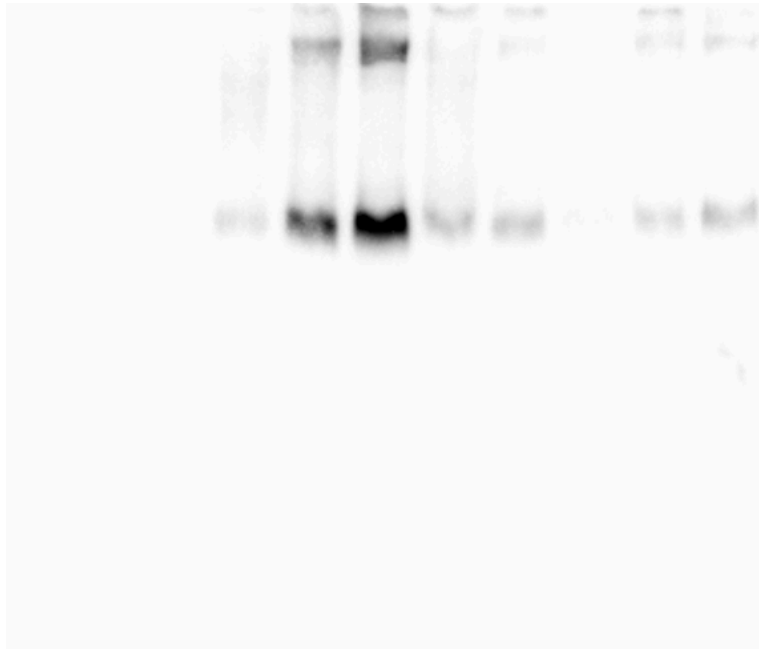
ii. Figure 5A, weeklong feed experiment – pAkt (a), pGSK3B (b), pFOXO (c), and actin (d)



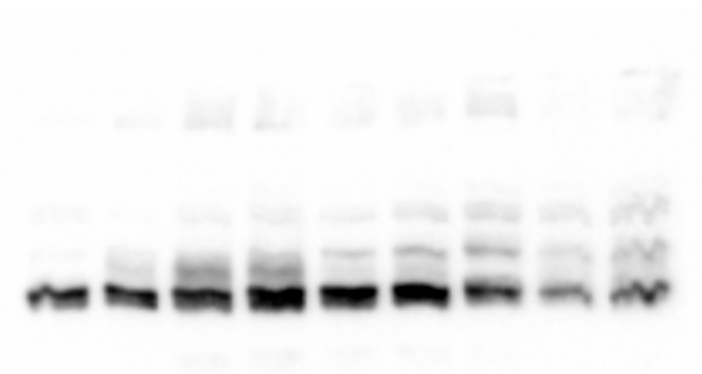
(a) Image displays chemiluminescent detection of anti-pAkt, using an anti-pAkt primary antibody, for blot shown in Figure 5A. Multiple bands observed, potentially as a result of the detection of different pAkt homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Bottom set of bands used as pAkt protein signal, based on MW identification of typical pAkt protein size in mammals (~60 kDa). Last two lanes not shown in Figure 5. Ladder not shown.



(b) Image displays chemiluminescent detection of anti-pGSK3B, using an anti-pGSK3B primary antibody, for blot shown in Figure 5A. Multiple bands observed, potentially as a result of the detection of different pGSK3B homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Bottom set of bands used as pGSK3B protein signal, based on MW identification of typical pGSK3B protein size in mammals (~46 kDa). Last two lanes not shown in Figure 5. Ladder not shown.



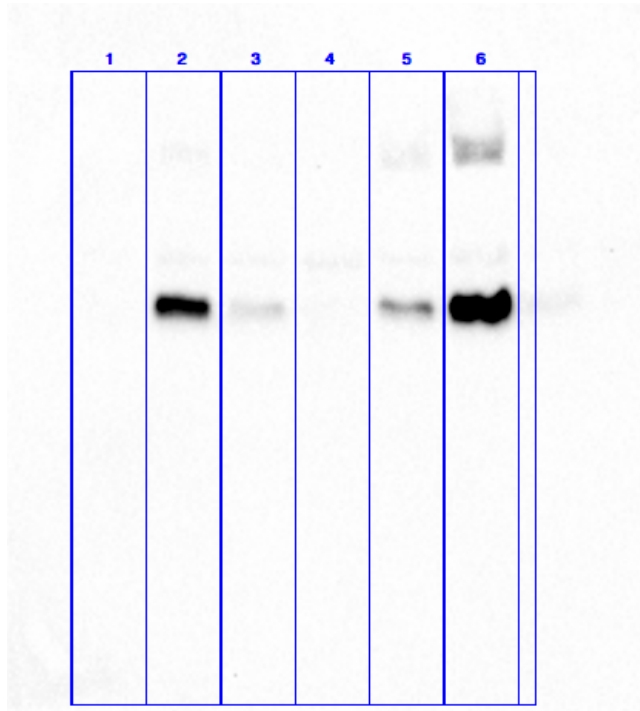
(c) Image displays chemiluminescent detection of anti-pFOXO, using an anti-pFOXO primary antibody, for blot shown in Figure 5A. Multiple bands observed, potentially as a result of the detection of different pFOXO homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Bottom set of bands used as pFOXO protein signal, based on MW identification of typical pFOXO protein size in mammals (~82 kDa). Last two lanes not shown in Figure 5. Ladder not shown.



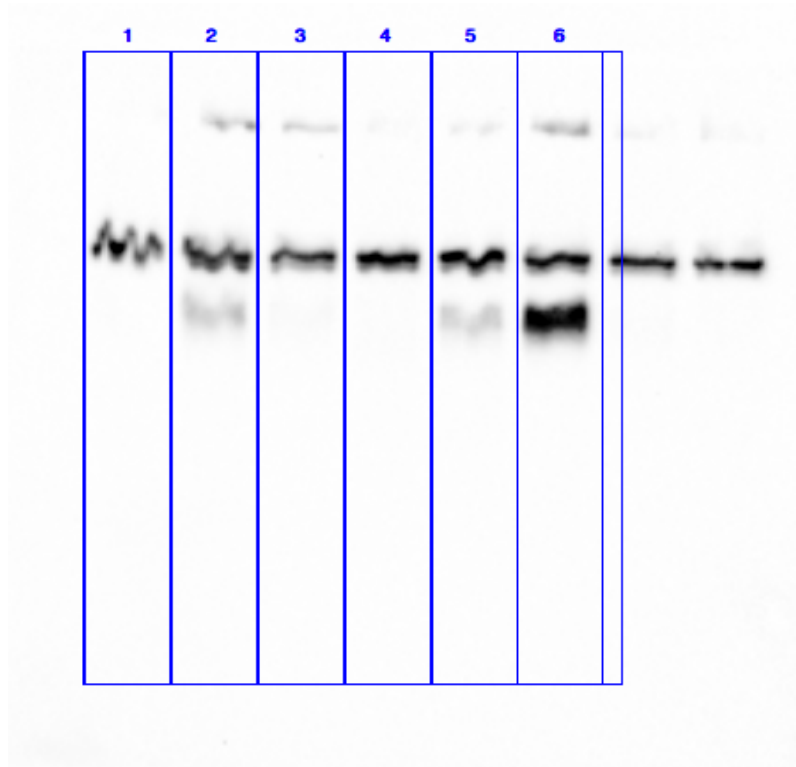
(d) Image displays chemiluminescent detection of anti-actin, using an anti-B-actin primary antibody, for blot shown in Figure 5A. Multiple bands observed, potentially as a result of the detection of different actin homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Bottom set of bands used as actin protein signal and control, based on MW identification of typical actin protein size in mammals (~42 kDa). Last two lanes not shown in Figure 5. Ladder not shown.



iii. Figure 7A, saline vs. porcine insulin – pAkt (a), and Akt (b)

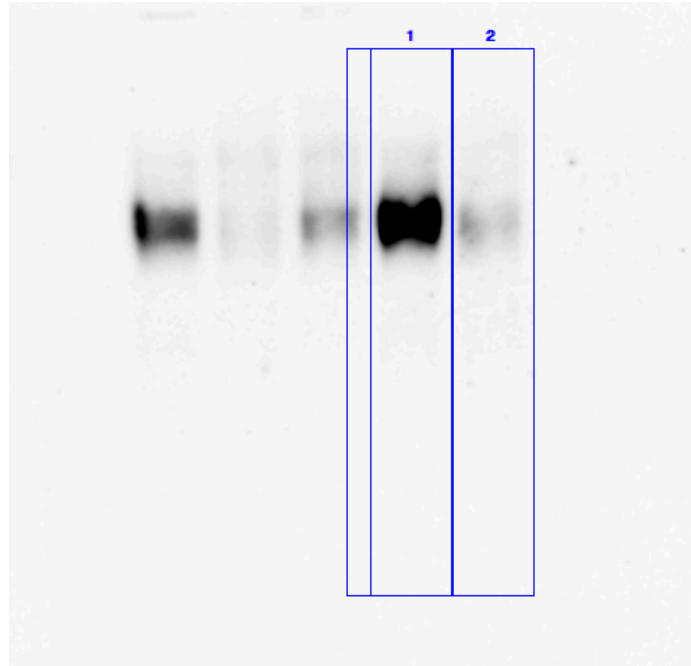


(a) Image displays chemiluminescent detection of anti-pAkt, using an anti-pAkt primary antibody, for blot shown in Figure 7A. Multiple bands observed, potentially as a result of the detection of different pAkt homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Bottom set of bands used as pAkt protein signal, based on MW identification of typical pAkt protein size in mammals (~60 kDa). Lanes correspond to the following conditions, as displayed in Figure 7A: Lane 1 = saline (- glucose); Lane 2 = saline (+ glucose); Lane 5 = porcine insulin (1  $\mu$ g); Lane 6 = porcine insulin (0.1  $\mu$ g). Ladder not shown. Lanes 3 and 4 not shown in Figure 7A.

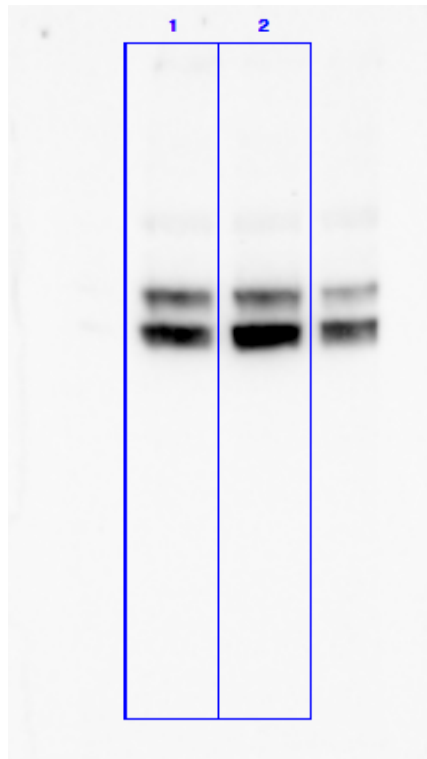


(b) Image displays chemiluminescent detection of anti-Akt, using an anti-Akt primary antibody, for blot shown in Figure 7A. Multiple bands observed, potentially as a result of the detection of different Akt homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Middle set of bands used as Akt protein signal, based on MW identification of typical Akt protein size in mammals (~60 kDa). Identified lanes correspond to the following conditions, as displayed in Figure 7A: Lane 1 = saline (- glucose); Lane 2 = saline (+ glucose); Lane 3 = human insulin (1  $\mu$ g); Lane 4 = human insulin (0.1  $\mu$ g); Lane 5 = porcine insulin (1  $\mu$ g); Lane 6 = porcine insulin (0.1  $\mu$ g). Ladder not shown. Lanes 3, 4, and last 2 lanes not shown in Figure 7A.

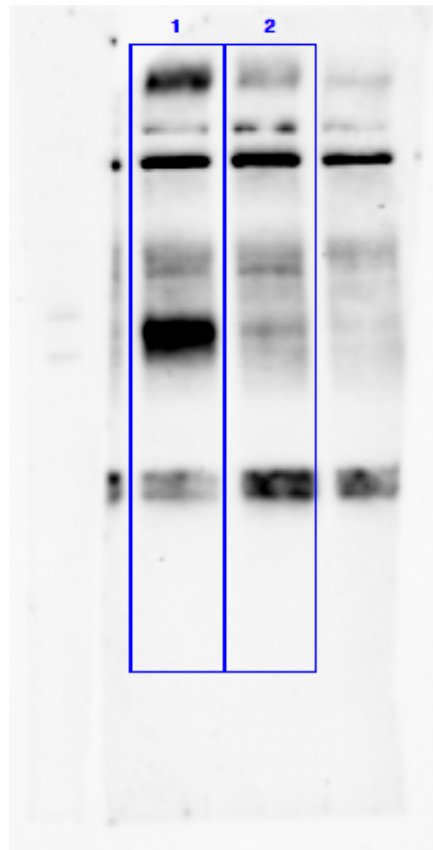
iv. Figure 10, dsIR injections – pAkt (a), pGSK3B (b), pFOXO (c), and tubulin (d)



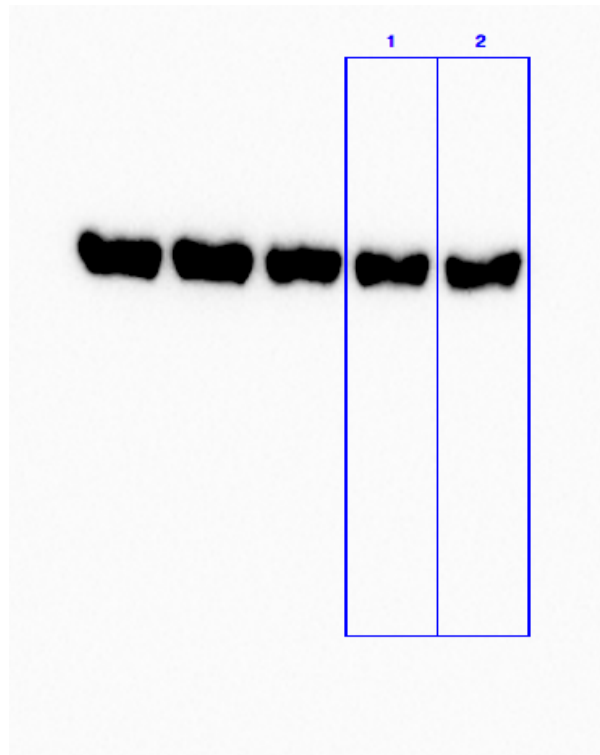
(a) Image displays chemiluminescent detection of anti-pAkt, using an anti-pAkt primary antibody, for blot shown in Figure 10. Multiple bands observed, potentially as a result of the detection of different pAkt homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Samples were obtained solely from fat bodies of unstimulated, starved 5<sup>th</sup> instar *R. prolixus*, unlike other blots shown in Figures 4, 5 and 7, and thus the propensity for detecting background noise is also higher since the signal intensity of pFOXO is inherently weaker without stimulation of the pathway by feeding or pharmacological intervention. Bottom set of bands used as pAkt protein signal, based on MW identification of typical pAkt protein size in mammals (~60 kDa). Identified lanes correspond to the following conditions, as displayed in Figure 10: Lane 1 = dsARG; Lane 2 = dsIR. Ladder not shown. Other lanes not used in Fig. 10.



(b) Image displays chemiluminescent detection of anti-pGSK3B, using an anti-pGSK3B primary antibody, for blot shown in Figure 5A. Multiple bands observed, potentially as a result of the detection of different pGSK3B homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Samples were obtained solely from fat bodies of unstimulated, starved 5<sup>th</sup> instar *R. prolixus*, unlike other blots shown in Figures 4, 5 and 7, and thus the propensity for detecting background noise is also higher since the signal intensity of pGSK3B is inherently weaker without stimulation of the pathway by feeding or pharmacological intervention. Bottom set of bands used as pGSK3B protein signal, based on MW identification of typical pGSK3B protein size in mammals (~46 kDa). Identified lanes correspond to the following conditions, as displayed in Figure 10: Lane 1 = dsARG; Lane 2 = dsIR. Ladder not shown. Other lanes not used in Fig. 10.



(c) Image displays chemiluminescent detection of anti-pFOXO, using an anti-pFOXO primary antibody, for blot shown in Figure 10. Multiple bands observed, potentially as a result of the detection of different pFOXO homologs that could be present in *R. prolixus*, or due to the detection of similar epitopes within different insect proteins. Samples were obtained solely from fat bodies of unstimulated, starved 5<sup>th</sup> instar *R. prolixus*, unlike other blots shown in Figures 4, 5 and 7, and thus the propensity for detecting background noise is also higher since the signal intensity of pFOXO is inherently weaker without stimulation of the pathway by feeding or pharmacological intervention. Middle set of bands used as pFOXO protein signal, based on MW identification of typical pFOXO protein size in mammals (~82 kDa). Identified lanes correspond to the following conditions, as displayed in Figure 10: Lane 1 = dsARG; Lane 2 = dsIR. Ladder not shown. Other lanes not used in Fig. 10.



(d) Image displays chemiluminescent detection of anti-tubulin, using an anti- $\alpha$ -tubulin primary antibody, for blot shown in Figure 10. Single set of bands used as tubulin protein signal control, based on MW identification of typical  $\alpha$ -tubulin protein size in mammals ( $\sim 50$  kDa). Identified lanes correspond to the following conditions, as displayed in Figure 10: Lane 1 = dsARG; Lane 2 = dsIR. Ladder not shown. Other lanes not used in Fig. 10.