|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Organism | **Order** | **Genome Assembly** | **Transcript Annotation** | **Length (bps)** | **N-terminus** | **C-terminus** | **Identity**  **% (Order subject)** |
| Acyrthosiphon pisumAcypi | Hemiptera | EQ110797 | ACYPI000094 | 1236 | TSSYPTRY | KLTNNTTK | 92 (Hemiptera) |
|  |  | EQ110797 | ACYPI009116 | 363 | PAKYTTKY | AKKLNIDV | 90 (Hemiptera) |
|  |  | EQ116326 | ACYPI002311 | 1039 | LKKFLSTL | FLENLNTD | 78 (Hemiptera) |
|  |  | EQ117790 | ACYPI000097 | 815 | GTAYTTKY | KKKGVVKF | 97 (Hemiptera) |
|  |  | EQ121783 | ACYPI000093 | 812 | FPAYMKRF | KLNKFLDA | 90 (Hemiptera) |
|  |  | EQ121783 | ACYPI000345 | 1554 | SGYYLSTY | IINFMNQK | 80 (Hemiptera) |
|  |  | EQ122410 | ACYPI005842 | 844 | KDSSLPNV | LKQYQSGF | 96 (Hemiptera) |
|  |  | EQ125317 | ACYPI000096 | 669 | FTLAEEKY | ERAAAAKH | 95 (Hemiptera) |
|  |  | EQ125317 | ACYPI003368 | 2009 | EDDDKPDF | TANIVKIQ | 79 (Hemiptera) |
|  |  | EQ126525 | ACYPI000095 | 645 | QEKYSTKY | KKLEKFSA | 91 (Hemiptera) |
|  |  |  |  |  |  |  |  |
| Bemisia tabaciBemta | Hemiptera | LOC109029910 | Bta06193+ | 940 | AEFYTSQF | EKALLGSR | 47 (Diptera) |
|  |  | LOC109030432 | Bta07590 | 596 | EQSDLEKF | DLEKFMSS | 42 (Lepidoptera) |
|  |  | LOC109030655 | Bta07752+ | 456 | MKEALKRM | EKFFASSK | 46 (Hemiptera) |
|  |  | LOC109030749 | Bta08123 | 384 | AEFYTSQF | EKALLGSR | 51 (Ephemeroptera) |
|  |  | LOC109030750 | Bta05122 | 384 | AETYTTEF | EEAFLGSL | 48 (Hemiptera) |
|  |  | LOC109031385 | Bta08846 | 689 | DDFYSDKY | AKFKARFP | 59 (Hemiptera) |
|  |  | LOC109031577 | Bta09312 | 1140 | AEFYTTSQ | EKALLGAR | 48 (Hymenoptera) |
|  |  | LOC109031699 | Bta09832 | 330 | SAHLGPNF | KIAAKYKK | 58 (Hymenoptera) |
|  |  | LOC109032962 | Bta06193+ | 594 | AEFYTSQF | EKALLGSR | 53 (Hymenoptera) |
|  |  | LOC109034312 | BtabCSP1 | 381 | ADTYTTQF | KALFGQTL | 54 (Diptera) |
|  |  | LOC109034660 | Bta13934 | 497 | AEFYTSQF | EKALLASP | 50 (Diptera) |
|  |  | LOC109040632 | Bta10843 | 569 | WGTSGQRV | AKYGRAFF | 51 (Hemiptera) |
|  |  | LOC109040648 | XM\_019026637 | 492 | DEKLLSKY | ESAKAPKA | 64 (Coleoptera) |
|  |  | LOC109040996 | Bta03345 | 580 | RAQENQKQ | AEKDAPKK | 43 (Diptera) |
|  |  | LOC109041650 | Bta07752+ | 907 | MKEALKRM | EKFFASSK | 46 (Hemiptera) |
|  |  | LOC109042107 | Bta03344 | 2151 | RATYTTKY | PKRGQETG | 60 (Hemiptera) |
|  |  | LOC109042122 | XM\_019058691 | 741 | EEKYSDKY | LKKETGQA | 47 (Dictyotera) |
|  |  | LOC109042131 | BtabCSP2 | 396 | AAPAEDKY | QEYLKASA | 53 (Hemiptera) |
|  |  | LOC109043307 | BtabCSP3 | 417 | ESTYTNKY | AEKLGIKV | 53 (Hymenoptera) |
|  |  | LOC109043693 | Bta03347 | 631 | TLCSSPAL | EFMDEDND | †40 (Coleoptera) |
|  |  | LOC109043753 | Bta09642 | 1973 | PQTTRATI | KIVKQFTS | 75 (Hemiptera) |
|  |  |  | KY305451 | 370 | ASTYTTKY | YADEAKKR | 94 (Hemiptera)& |
|  |  | LOC109045321 | Bta12075 | 384 | AEFYTSQF | EKALLGSR | 47 (Coleoptera) |
|  |  |  |  |  |  |  |  |
| Halyomorpha halysHalha | Hemiptera | LOC106678159 | XM\_014416524 | 381 | AEVYTSKY | TTAAPAAA | 92 (Heteroptera) |
|  |  | Scaffold214 | XM\_014418950 | 387 | ERQVLARL | RMEKFAAT | 90 (Heteroptera) |
|  |  | LOC106681195 | XM\_014421395 | 330 | CAESRPSV | ILKQYAGQ | 95 (Heteroptera) |
|  |  | LOC106681317 | XM\_014421569 | 381 | QQSYTDKW | KYEYEEDK | 87 (Heteroptera) |
|  |  | LOC106681351 | XM\_014421626 | 903 | ATTYTTKY | EKRGIKIN | 71 (Heteroptera) |
|  |  | LOC106681352 | XM\_014421627 | 363 | ADMYTTKY | RKRHNIKA | 63 (Heteroptera) |
|  |  | LOC106681353 | XM\_014421628 | 529 | KEGYTTKY | YRKKHAQS | 63 (Heteroptera) |
|  |  | LOC106681354 | XM\_014421629 | 686 | QSAKIDKY | QKLRKLYA | 55 (Heteroptera) |
|  |  | LOC106681357 | XM\_014421632 | 478 | PDGYTTKY | AEKRGIKI | 95 (Heteroptera) |
|  |  | LOC106681358 | XM\_014421634 | 503 | KGSYTTRY | AEKRGIKI | 63 (Heteroptera) |
|  |  | LOC106686897 | XM\_014430494 | 465 | PDGYTTKY | AEKHGIKI | 87 (Hemiptera) |
|  |  | LOC106686898 | XM\_014430495 | 408 | LAKPTTKT | AEKRGIKL | 84 (Heteroptera) |
|  |  | LOC106688012 | XM\_014432270 | 456 | EAQLLGGT | RFTPQSSG | 85 (Heteroptera) |
|  |  | LOC106688752 | XM\_014433350 | 435 | IDVYEKIL | IKEFLETY | 85 (Heteroptera) |
|  |  | LOC106691225 | XM\_014436935 | 381 | AMSVPTRY | EKRGVKFS | 61 Ser/Thr Kinase |
|  |  | LOC106691226 | XM\_014436938 | 384 | VTTYTTKY | NKGIKMVV | 62 (Heteroptera) |
|  |  | LOC106691228 | XM\_014436939 | 495 | PDGYPTKY | AEKRGIKL | 72 (Heteroptera) |
|  |  |  |  |  |  |  |  |
| Pachypsylla venustaPacve | Hemiptera | Scaffold96 | PVEN002856 | 357 | LSKYDNVN | TYRAKYGV | 54 (Psylloidea) |
|  |  | Scaffold122 | un | un | CWSYDSTY | LEAFLASP | 54 (Psylloidea)º |
|  |  | Scaffold301 | PVEN005587 | 240 | TNQESALL | -------- | 62 (Psylloidea) |
|  |  | Scaffold301 | PVEN005588 | 213 | TTKYDNID | -------- | 72 (Psylloidea) |
|  |  | Scaffold301 | PVEN005589 | 315 | -------- | NSNLFLGT | 78 (Psylloidea) |
|  |  | Scaffold301 | PVEN005590 | 381 | TTKYDNVN | YQSQLANL | 76 (Psylloidea) |
|  |  | Scaffold301 | PVEN005591 | 351 | ISLIHCNK | LKAGTLKL | 80 (Psylloidea)£ |
|  |  | Scaffold301 | PVEN005592 | 722 | TTKYDNVN | YQAQLSTL | 77 (Psylloidea) |
|  |  | Scaffold363 | PVEN005138 | 1171 | MHLQASIL | LREKYGFT | 83 (Psylloidea) |
|  |  | Scaffold363 | PVEN005140 | 434 | QEDLEKKY | TEKYGETV | 60 (Psylloidea) |
|  |  | Scaffold6471 | un | un | TNKYDNFD | QLLDKAKT | 88 (Psylloidea) |
|  |  | Scaffold6471 | PVEN013969 | 189 | TKKYDPTG | -------- | 87 (Psylloidea) |
|  |  | Scaffold8826 | PVEN014347 | 661 | TTKYDVDL | GAKFALKT | 70 (Psylloidea) |
|  |  | Scaffold20457 | un | un | TTKYDNVN | -------- | 97 (Psylloidea) |
|  |  | Scaffold21288 | un | un | TTKYDNVN | EEKYDKTG | 76 (Psylloidea) |
|  |  | Scaffold21840 | un | un | TTKYDNVN | -------- | 70 (Psylloidea) |

**Table S2.** Acypi ‘CSP’ gene repertoire in comparison to other Hemiptera, genome assembly, and protein identity. *Acypi*: *Acyrthosiphon pisum*, pea aphid (Sternorrhyncha, Aphididae); *Bemta*: *Bemisia tabaci*, silverleaf/tobacco whitefly (Sternorrhyncha, Aleyrodidae); *Halha*: *Halyomorpha halys*, brown marmorated stink bug (Heteroptera, Pentatomidae); *Pacve*: *Pachypsylla venusta*, hackberry petiole gall psyllid (Sternorrhyncha, Aphalaridae). £: three Cys, †: five Cys, º: seven Cys. un: unnoticed transcript.

Dashed lines: partial genes.

&: Bemta’s KY305451 locus (“*Bemisia tabaci* chemosensory protein 8”) has not been found. It ought not to be included in our analysis (potential contamination).