**Additional file 1**

**Comparative proteomic analysis provides new insight into differential transmission of two begomoviruses by a whitefly**

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**Table S1. Primers used in this study.**

|  |  |
| --- | --- |
| **Primer Name** | **Sequence** |
| TYLCV-detection-F | ATCGAAGCCCTGATGTTCCTCGTGG |
| TYLCV-detection-R | CAGAGCAGTTGATCATGTATTGTATG |
| PaLCuCNV-detection-F | TAGTCATTTCCACTCCCGC |
| PaLCuCNV-detection-R | TGATTGTCATACTTCGCAGC |
| ras-like-qPCR-F | GTTCCGTTCCAGCAGTGTCTA |
| ras-like-qPCR-R | TTGCATAGTTCGATGTTGTCGCA |
| Dystroglycan-qPCR-F | TGCAACCGTTGAGTCAACAC |
| Dystroglycan-qPCR-R | CAGGATCAAAAGTTGGTGTT |
| integrinα-PS2-q-F | GGTCTTGGCGCCTCCATCTC |
| integrinα-PS2-q-R | GCTGGTGGCCCTTCATTCGT |
| Laminin-qPCR-F | AGGCCAGTGCAAGTGCAAAC |
| Laminin-qPCR-R | AGGGTTGCAGCCTACACCAA |
| Cuticle67-qPCR-F | CCCGCAGGTTTACTACTCG |
| Cuticle67-qPCR-R | CGGAGGATGTTGGAGGACT |
| PITH-qPCR-F | TGCGGTTGAGTGTCTCAATG |
| PITH-qPCR-R | CTGCGTCAGCATCACTTTCA |
| proteasome 6-qPCR-F | AGGAGTACAAAGAAGGCATG |
| proteasome 6-qPCR-R | TGATGATACCGATTCTTG |

**Table S2. DEPs identified in the comparison of TYLCV-infected vs. un-infected.**

|  |  |  |
| --- | --- | --- |
| Protein ID | Protein name | Fold change |
| **Up-regulated** |  |  |
| comp73512\_c0\_orf1 | hypothetical protein SINV\_15050 | 2.32 |
| comp67637\_c0\_orf1 | PREDICTED: ras-related protein Rap-1b-like isoform 1 | 2.28 |
| c67729\_g1 | PREDICTED: similar to phospholipase A2, group VI (cytosolic, calcium-independent) | 1.89 |
| c38279\_g1 | PREDICTED: SH3 domain-binding glutamic acid-rich protein homolog | 1.8 |
| comp73324\_c0\_orf1 | PREDICTED: heterogeneous nuclear ribonucleoprotein K-like isoform 1 | 1.71 |
| comp58988\_c0\_orf1 | AAEL010801-PB | 1.68 |
| comp65705\_c0\_orf1 | PREDICTED: retinol dehydrogenase 11-like isoform 1 | 1.67 |
| comp74417\_c0\_orf1 | hypothetical protein TcasGA2\_TC004221 | 1.64 |
| comp66486\_c0\_orf1 | PREDICTED: elongation of very long chain fatty acids protein 4-like | 1.64 |
| c64110\_g1 | splicing factor, arginine/serine-rich 2 | 1.64 |
| c63913\_g1 | hypothetical protein KGM\_22666 | 1.61 |
| comp73067\_c1\_orf1 | farnesoic acid methyltransferase | 1.58 |
| c63230\_g1 | putative defense protein 3 | 1.57 |
| c61923\_g1 | nuclear protein | 1.57 |
| c68324\_g2 | unknown | 1.56 |
| c153250\_g1 | GH22984 | 1.56 |
| comp60292\_c0\_orf1 | TPA\_inf: cathepsin B | 1.54 |
| comp61888\_c0\_orf1 | sphingosine kinase A, B, putative | 1.54 |
| c66096\_g5 | conserved hypothetical protein | 1.53 |
| c59925\_g1 | 39S ribosomal protein L53, mitochondrial | 1.53 |
| c51657\_g1 | AGAP007992-PA | 1.53 |
| c63170\_g1 | PREDICTED: vacuolar protein sorting-associated protein 29-like | 1.51 |
| comp67402\_c3\_orf2 | D-beta-hydroxybutyrate dehydrogenase, putative | 1.51 |
| c69034\_g2 | PREDICTED: similar to AGAP006340-PC | 1.49 |
| comp41022\_c0\_orf1 | vitellogenin-1 | 1.48 |
| comp73950\_c0 | - | 1.47 |
| c57073\_g1 | unnamed protein product | 1.47 |
| comp63595\_c0\_orf1 | PREDICTED: hypothetical protein LOC100166785 | 1.47 |
| comp66975\_c0 | - | 1.47 |
| comp58993\_c0\_orf1 | cdk1 | 1.47 |
| comp55754\_c0\_orf1 | conserved hypothetical protein | 1.47 |
| comp72309\_c1\_orf1 | PREDICTED: similar to rab gdp/gtp exchange factor isoform 1 | 1.47 |
| c61243\_g1 | GI16849 | 1.45 |
| comp41074\_c1\_orf1 | PREDICTED: small ubiquitin-related modifier-like | 1.45 |
| comp250437\_c0\_orf1 | integrin alpha-PS2 precursor, putative | 1.45 |
| comp56573\_c1\_orf1 | PREDICTED: dephospho-CoA kinase domain-containing protein-like | 1.45 |
| c67538\_g1 | methionine sulfoxide reductase B3 isoform 1 | 1.45 |
| comp76302\_c0\_orf1 | membrane-associated protein, putative | 1.45 |
| c20768\_g1 | vitellogenin-1 | 1.44 |
| comp52386\_c0\_orf1 | PREDICTED: DNA polymerase delta subunit 2-like | 1.43 |
| c61021\_g1 | RNA polymerase-associated protein LEO1, putative | 1.43 |
| c59283\_g1 | PREDICTED: synaptosomal-associated protein 25-like | 1.43 |
| c64603\_g2 | hypothetical protein DAPPUDRAFT\_42659 | 1.42 |
| c30353\_g1 | orcokinin | 1.42 |
| c65325\_g2 | - | 1.41 |
| WP\_014895133\_1 | symbionin symS | 1.41 |
| c1950\_g1 | putative ribosomal protein S25 | 1.41 |
| c57402\_g1 | hypothetical protein KGM\_07372 | 1.41 |
| c69805\_g9 | ACYPI38240 | 1.41 |
| comp67813\_c0\_orf1 | PREDICTED: hypothetical protein LOC100166909 | 1.41 |
| 64195\_g1 | PREDICTED: sodium/calcium exchanger 1-like | 1.4 |
| comp40938\_c0\_orf1 | putative mitochondrial NADH dehydrogenase (ubiquinone) 1 alpha subcomplex | 1.4 |
| c56033\_g1 | PREDICTED: similar to metaxin 2 | 1.4 |
| comp71236\_c0\_orf1 | PREDICTED: surfeit locus protein 1-like | 1.38 |
| comp63077\_c0\_orf1 | AT15141p | 1.38 |
| comp74852\_c0\_orf1 | hypothetical protein G5I\_03899 | 1.38 |
| comp69323\_c1 | - | 1.38 |
| c59207\_g2 | - | 1.37 |
| c70930\_g4 | - | 1.37 |
| c25716\_g1 | low-density lipoprotein receptor, putative | 1.37 |
| comp72185\_c0\_orf1 | PREDICTED: prostatic acid phosphatase-like | 1.37 |
| c45818\_g1 | AGAP003184-PA | 1.36 |
| comp70776\_c1\_orf1 | PREDICTED: protein alan shepard-like | 1.36 |
| c3648\_g1 | PREDICTED: similar to ATP synthase delta chain, mitochondrial | 1.36 |
| comp477134\_c0\_orf1 | PREDICTED: hemicentin-1-like isoform 2 | 1.36 |
| comp380948\_c0\_orf1 | PREDICTED: laminin subunit alpha-like | 1.36 |
| comp879424\_c0\_orf1 | PREDICTED: chaoptin-like | 1.36 |
| comp70218\_c0\_orf1 | PREDICTED: similar to tau CG31057-PA | 1.36 |
| c67104\_g2 | PREDICTED: hypothetical protein LOC100114408 | 1.36 |
| c62328\_g1 | hypothetical protein DAPPUDRAFT\_329664 | 1.35 |
| comp72848\_c1\_orf1 | conserved hypothetical protein | 1.35 |
| c51220\_g1 | PREDICTED: icarapin-like | 1.35 |
| c63324\_g1 | conserved hypothetical protein | 1.35 |
| comp71497\_c1\_orf1 | PREDICTED: cAMP-dependent protein kinase catalytic subunit-like | 1.35 |
| c35339\_g1 | - | 1.35 |
| comp39853\_c0 | - | 1.34 |
| c62046\_g1 | unnamed protein product | 1.34 |
| comp67502\_c0\_orf1 | PREDICTED: UDP-glucuronosyltransferase 1-7-like | 1.34 |
| comp68485\_c0\_orf1 | PREDICTED: short-chain dehydrogenase/reductase family 16C member 6-like isoform 1 | 1.34 |
| fig|572265\_7\_peg\_974 | - | 1.34 |
| c61942\_g1 | - | 1.34 |
| c69852\_g2 | sjoegren syndrome nuclear autoantigen 1-like protein | 1.33 |
| c68842\_g2 | PREDICTED: similar to groucho protein | 1.33 |
| comp647510\_c0\_orf1 | hypothetical protein KGM\_12959 | 1.32 |
| comp1063366\_c0\_orf1 | ADP/ATP-carrier protein, partial | 1.32 |
| c52720\_g1 | 60S ribosomal protein L27a | 1.32 |
| comp59199\_c0\_orf1 | PREDICTED: similar to conserved hypothetical protein | 1.32 |
| c69790\_g2 | PREDICTED: hypothetical protein LOC100121386 isoform 1 | 1.32 |
| comp74180\_c0\_orf1 | PREDICTED: similar to AGAP010237-PA | 1.32 |
| c57159\_g1 | GJ20513 | 1.32 |
| comp63139\_c0\_orf1 | 60S ribosomal protein L8-like | 1.31 |
| c48270\_g1 | ACYPI008219 | 1.31 |
| c16261\_g1 | PREDICTED: similar to maggie CG14981-PA | 1.3 |
| comp40774\_c0\_orf1 | PREDICTED: polyribonucleotide nucleotidyltransferase-like | 1.3 |
| c56539\_g1 | uncharacterized protein LOC100163911 | 1.29 |
| comp66903\_c0\_orf1 | PREDICTED: integrin alpha-PS2-like | 1.29 |
| c68868\_g2 | - | 1.29 |
| c65422\_g1 | - | 1.29 |
| comp67800\_c0\_orf1 | Thioredoxin domain-containing protein 12 precursor | 1.29 |
| c64808\_g1 | heat shock factor binding protein 1-like | 1.28 |
| comp29968\_c0\_orf1 | PREDICTED: hypothetical protein LOC100746188 | 1.28 |
| c59011\_g1 | death-associated protein-like protein | 1.28 |
| comp59163\_c0\_orf1 | conserved hypothetical protein | 1.28 |
| c123606\_g1 | lsm4 protein | 1.28 |
| c70349\_g1 | cysteine string protein | 1.28 |
| c12520\_g1 | vascular cell adhesion protein 1 precursor, putative | 1.28 |
| comp70506\_c0\_orf1 | PREDICTED: caspase-2-like isoform 1 | 1.27 |
| c65822\_g1 | - | 1.27 |
| c63201\_g1 | PREDICTED: WD40 repeat-containing protein SMU1-like isoform 1 | 1.27 |
| comp40702\_c0\_orf1 | hypothetical protein DAPPUDRAFT\_110732 | 1.27 |
| c44015\_g1 | PREDICTED: tropomyosin-2-like isoform 2 | 1.27 |
| comp71783\_c1\_orf1 | putative chemosensory protein CSP6 | 1.26 |
| comp74364\_c0\_orf1 | AGAP006662-PA | 1.26 |
| c64336\_g1 | nuclear pore complex protein nup154, putative | 1.26 |
| comp72119\_c0\_orf1 | stromal interaction molecule-like protein | 1.26 |
| comp65802\_c0\_orf1 | PREDICTED: similar to succinate semialdehyde dehydrogenase, mitochondrial | 1.26 |
| c59346\_g1 | actin | 1.26 |
| c43129\_g1 | DPY-30 protein, putative | 1.26 |
| comp38150\_c0\_orf1 | PREDICTED: basement membrane-specific heparan sulfate proteoglycan core protein-like | 1.26 |
| comp59667\_c0\_orf1 | PREDICTED: hypothetical protein LOC100159939 | 1.26 |
| c61447\_g1 | membrane-bound trehalase | 1.26 |
| comp67785\_c0\_orf1 | replication protein A 70 kDa DNA-binding subunit | 1.25 |
| comp59349\_c0\_orf1 | PREDICTED: putative rRNA methyltransferase 3-like | 1.25 |
| comp56975\_c0\_orf1 | histone H2AV | 1.25 |
| comp70278\_c0\_orf1 | PREDICTED: multidrug resistance-associated protein 1-like isoform 3 | 1.25 |
| c68596\_g1 | PREDICTED: hypothetical protein LOC100119750 | 1.25 |
| comp60414\_c0 | - | 1.25 |
| c1880\_g1 | PREDICTED: protein LSM12 homolog | 1.25 |
| comp57333\_c0\_orf1 | Pupal cuticle protein C1B, putative | 1.25 |
| c57836\_g3 | PREDICTED: hypothetical protein LOC100744819 | 1.25 |
| comp56451\_c0\_orf1 | PREDICTED: 60S ribosomal protein L7a-like | 1.24 |
| comp74974\_c0\_orf1 | hypothetical protein DAPPUDRAFT\_306461 | 1.24 |
| c54345\_g1 | signal recognition particle | 1.24 |
| c4493\_g1 | cytochrome b-c1 complex subunit 8 | 1.24 |
| c66677\_g1 | PREDICTED: tRNA pseudouridine synthase-like 1-like | 1.24 |
| comp67133\_c0\_orf1 | PREDICTED: glucose dehydrogenase [acceptor]-like | 1.24 |
| comp61231\_c0\_orf1 | PREDICTED: hypothetical protein LOC100647906 | 1.24 |
| c72114\_g1 | predicted protein | 1.24 |
| c58393\_g1 | - | 1.24 |
| comp71822\_c0\_orf1 | EH domain-binding protein 1 | 1.24 |
| c65636\_g1 | PREDICTED: hypothetical protein LOC100741880 | 1.24 |
| c69335\_g1 | PREDICTED: neuroblastoma-amplified sequence-like isoform 1 | 1.24 |
| comp58670\_c0\_orf1 | hypothetical protein DAPPUDRAFT\_100476 | 1.24 |
| comp64445\_c0\_orf1 | CG12163, isoform B | 1.23 |
| comp67571\_c0\_orf1 | lingerer, putative | 1.23 |
| comp71764\_c0\_orf1 | PREDICTED: thiamin pyrophosphokinase 1-like | 1.23 |
| c41383\_g1 | alpha-I tubulin | 1.23 |
| c58616\_g1 | PREDICTED: pleckstrin homology domain-containing family F member 2-like isoform 3 | 1.23 |
| c66686\_g2 | - | 1.23 |
| comp59039\_c0 | - | 1.23 |
| comp70509\_c0\_orf1 | PREDICTED: hypothetical protein LOC100167736 | 1.23 |
| c64495\_g1 | calcyphosin-like protein | 1.23 |
| c68616\_g1 | - | 1.23 |
| c55608\_g1 | troponin C-like | 1.23 |
| c70264\_g1 | GE10211 | 1.23 |
| comp64748\_c0\_orf1 | PREDICTED: similar to S14e ribosomal protein | 1.22 |
| comp69527\_c0 | - | 1.22 |
| comp29955\_c0\_orf1 | ribosomal protein L28-like protein | 1.22 |
| comp74679\_c0\_orf1 | - | 1.22 |
| comp62891\_c0\_orf1 | hypothetical protein TcasGA2\_TC013378 | 1.22 |
| comp69910\_c0\_orf1 | hypothetical protein TcasGA2\_TC006332 | 1.22 |
| c70437\_g2 | PREDICTED: protein lin-7 homolog B-like | 1.22 |
| comp67346\_c0\_orf1 | hypothetical protein DAPPUDRAFT\_259342 | 1.22 |
| comp67677\_c0\_orf1 | phosphatidylethanolamine-binding protein | 1.22 |
| comp64164\_c0\_orf1 | lysine-specific histone demethylase, putative | 1.22 |
| c63669\_g1 | - | 1.22 |
| c59927\_g1 | PREDICTED: probable enoyl-CoA hydratase, mitochondrial-like | 1.22 |
| c121590\_g1 | hypothetical protein TcasGA2\_TC012992 | 1.22 |
| comp63573\_c0\_orf1 | putative ribosomal protein S23e | 1.21 |
| comp68746\_c0\_orf1 | hypothetical protein TcasGA2\_TC030780 | 1.21 |
| comp40980\_c0 | - | 1.21 |
| comp75355\_c0\_orf1 | eukaryotic translation initiation factor 3 subunit G | 1.21 |
| c56074\_g1 | - | 1.21 |
| c67794\_g1 | - | 1.21 |
| comp74038\_c0\_orf1 | AGAP011399-PA | 1.21 |
| comp74036\_c2\_orf1 | PREDICTED: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1 | 1.21 |
| comp70830\_c1\_orf1 | conserved hypothetical protein | 1.21 |
| comp41760\_c1\_orf1 | GF11465 | 1.21 |
| c59347\_g2 | gliotactin, isoform B | 1.21 |
| comp73661\_c0\_orf1 | PREDICTED: splicing factor 3A subunit 1 | 1.21 |
| c67248\_g1 | PREDICTED: hypothetical protein LOC100167398 | 1.21 |
| c64398\_g1 | PREDICTED: similar to CG3983 CG3983-PB | 1.21 |
| **Down-regulated** |  |  |
| comp65762\_c0\_orf1 | PREDICTED: myosin heavy chain, muscle isoform 1 | 0.62 |
| c68821\_g2 | ptpla domain protein, putative | 0.7 |
| c53347\_g1 | PREDICTED: band 4.1-like protein 5-like | 0.7 |
| comp70000\_c0\_orf1 | C-factor, putative | 0.72 |
| c61960\_g2 | hypothetical protein SINV\_08125 | 0.73 |
| c66630\_g1 | COE2, partial | 0.73 |
| comp70145\_c0\_orf1 | phosphatidylethanolamine-binding protein | 0.73 |
| comp59684\_c0\_orf1 | glutathione S transferase class delta variant 1 | 0.73 |
| comp68395\_c0\_orf1 | PREDICTED: SEC14-like protein 3-like | 0.73 |
| c67931\_g1 | predicted protein | 0.73 |
| comp65894\_c0\_orf1 | cathepsin B-N | 0.73 |
| comp74117\_c0\_orf1 | hypothetical protein TcasGA2\_TC003706 | 0.74 |
| comp70583\_c2\_orf1 | PREDICTED: presqualene diphosphate phosphatase-like | 0.74 |
| c69608\_g1 | PREDICTED: neurexin-4-like | 0.74 |
| comp72200\_c4\_orf2 | putative histidine triad protein member | 0.75 |
| comp580790\_c0\_orf1 | actin | 0.75 |
| c62307\_g1 | PREDICTED: myosin heavy chain, muscle isoform 1 | 0.75 |
| c60367\_g1 | PREDICTED: trimeric intracellular cation channel type B-A-like | 0.76 |
| c68307\_g2 | hypothetical protein TcasGA2\_TC009928 | 0.76 |
| c66619\_g4 | PREDICTED: similar to CG9723 CG9723-PA | 0.76 |
| comp61171\_c0\_orf1 | unnamed protein product | 0.76 |
| c67727\_g1 | - | 0.77 |
| c11466\_g1 | - | 0.77 |
| comp76311\_c0\_orf1 | PREDICTED: similar to synaptobrevin | 0.77 |
| comp73113\_c2\_orf1 | tyrosine/tryptophan monooxygenase, putative | 0.78 |
| c70086\_g1 | hypothetical protein TcasGA2\_TC004221 | 0.78 |
| c65252\_g1 | hypothetical protein TcasGA2\_TC008304 | 0.78 |
| comp67364\_c0\_orf1 | PREDICTED: ribosomal protein S6 kinase alpha-3-like isoform 1 | 0.78 |
| comp46864\_c1\_orf1 | PREDICTED: phosphatidylinositol 4-kinase alpha-like isoform 2 | 0.79 |
| comp72764\_c0\_orf1 | hypothetical protein TcasGA2\_TC014328 | 0.79 |
| comp66853\_c0\_orf1 | hypothetical protein TcasGA2\_TC003145 | 0.79 |
| c42754\_g2 | S1 RNA binding domain containing protein | 0.79 |
| comp73123\_c0\_orf1 | conserved hypothetical protein | 0.79 |
| c50021\_g1 | PREDICTED: cytochrome b-c1 complex subunit 9-like | 0.8 |
| c56795\_g1 | u6 snRNA-associated sm-like protein lsm2 | 0.8 |
| comp61846\_c1\_orf1 | cytochrome P450 | 0.8 |
| comp74503\_c0\_orf1 | hypothetical protein TcasGA2\_TC008454 | 0.8 |
| c37613\_g1 | vitellogenin | 0.8 |
| comp68399\_c0\_orf1 | PREDICTED: DNA replication licensing factor mcm7-like isoform 1 | 0.8 |
| c50713\_g1 | PREDICTED: 3-ketodihydrosphingosine reductase-like | 0.8 |
| c63618\_g1 | - | 0.8 |
| comp72159\_c1\_orf1 | GF11454 | 0.8 |
| c1613\_g1 | PREDICTED: guanine nucleotide-binding protein G(s) subunit alpha-like | 0.8 |
| comp72720\_c0\_orf1 | PREDICTED: TBC domain-containing protein kinase-like protein-like | 0.81 |
| c58571\_g1 | phosphatidylethanolamine-binding protein | 0.81 |
| c63198\_g1 | PREDICTED: CCR4-NOT transcription complex subunit 7-like | 0.81 |
| c62278\_g1 | Microspherule protein 1 | 0.81 |
| c25679\_g1 | putative mitochondrial NADH-ubiquinone oxidoreductase AGGG subunit | 0.81 |
| c60561\_g1 | cathepsin B-S | 0.81 |
| comp74008\_c0\_orf1 | PREDICTED: non-lysosomal glucosylceramidase-like | 0.81 |
| comp68870\_c3\_orf2 | PREDICTED: COMM domain-containing protein 8 | 0.81 |
| c64030\_g1 | - | 0.81 |
| c63526\_g1 | hypothetical protein TcasGA2\_TC010433 | 0.81 |
| c51011\_g1 | ribosomal protein S15Aa, isoform D | 0.81 |
| c62876\_g1 | 2-deoxyribose-5-phosphate aldolase homolog (C. elegans) | 0.82 |
| c63168\_g2 | PREDICTED: ATP-binding cassette sub-family G member 4-like isoform 1 | 0.82 |
| comp63738\_c0\_orf1 | tyrosine-protein phosphatase corkscrew, putative | 0.82 |
| c55589\_g1 | acyl-CoA-binding protein | 0.82 |
| c56365\_g1 | eukaryotic translation initiation factor 3 subunit 12-like protein | 0.82 |
| comp67452\_c0\_orf1 | PREDICTED: traB domain-containing protein-like isoform 2 | 0.82 |
| comp71710\_c0\_orf1 | PREDICTED: glucosamine-6-phosphate isomerase isoform 1 | 0.82 |
| comp71804\_c0\_orf1 | PREDICTED: puromycin-sensitive aminopeptidase-like | 0.82 |
| comp71613\_c0\_orf1 | PREDICTED: serine/threonine-protein phosphatase 5-like | 0.83 |
| comp63275\_c0 | - | 0.83 |
| comp58633\_c0\_orf1 | PREDICTED: similar to CG8128 CG8128-PA | 0.83 |
| c68792\_g2 | PREDICTED: UPF0160 protein MYG1, mitochondrial-like | 0.83 |
| c67690\_g2 | hypothetical protein BRAFLDRAFT\_66468 | 0.83 |
| comp58745\_c0\_orf1 | unknown | 0.83 |
| c57778\_g1 | hypothetical protein TcasGA2\_TC013249 | 0.83 |
| c59635\_g1 | hypothetical protein SINV\_08840 | 0.83 |
| comp62425\_c0 | - | 0.83 |
| comp76071\_c0\_orf1 | conserved hypothetical protein | 0.83 |
| c62511\_g1 | aminopeptidase-like protein | 0.83 |
| c62993\_g1 | PREDICTED: hypothetical protein LOC100118865 isoform 1 | 0.83 |
| c62557\_g1 | AGAP004533-PA | 0.83 |
| c67051\_g1 | COP9 signalosome complex subunit, putative | 0.83 |
| comp41053\_c0\_orf1 | ribosomal protein L18A | 0.83 |

**Table S3. DEPs identified in the comparison of PaLCuCNV-infected vs. un-infected.**

|  |  |  |
| --- | --- | --- |
| **Protein ID** | **Protein name** | **Fold change** |
| **Up-regulated** |  |  |
| comp67637\_c0\_orf1 | PREDICTED: ras-related protein Rap-1b-like isoform 1 | 2.3 |
| c61139\_g1 | PREDICTED: protein msta, isoform B-like | 2.16 |
| comp60292\_c0\_orf1 | TPA\_inf: cathepsin B | 2.01 |
| c67729\_g1 | PREDICTED: similar to phospholipase A2, group VI (cytosolic, calcium-independent) | 1.96 |
| comp66486\_c0\_orf1 | PREDICTED: elongation of very long chain fatty acids protein 4-like | 1.95 |
| c64195\_g1 | PREDICTED: sodium/calcium exchanger 1-like | 1.85 |
| c64800\_g1 | AAEL006918-PB | 1.83 |
| comp74417\_c0\_orf1 | hypothetical protein TcasGA2\_TC004221 | 1.81 |
| c63170\_g1 | PREDICTED: vacuolar protein sorting-associated protein 29-like | 1.75 |
| c56768\_g1 | actin | 1.73 |
| c38279\_g1 | PREDICTED: SH3 domain-binding glutamic acid-rich protein homolog | 1.72 |
| c51657\_g1 | AGAP007992-PA | 1.71 |
| comp73512\_c0\_orf1 | hypothetical protein SINV\_15050 | 1.7 |
| c64110\_g1 | Splicing factor, arginine/serine-rich 2 | 1.69 |
| c44423\_g2 | hypothetical protein DAPPUDRAFT\_307391 | 1.67 |
| c153250\_g1 | GH22984 | 1.67 |
| c63230\_g1 | putative defense protein 3 | 1.66 |
| comp67402\_c3\_orf2 | D-beta-hydroxybutyrate dehydrogenase, putative | 1.66 |
| comp879424\_c0\_orf1 | PREDICTED: chaoptin-like | 1.62 |
| c65422\_g1 | - | 1.6 |
| comp58993\_c0\_orf1 | cdk1 | 1.6 |
| c66096\_g5 | conserved hypothetical protein | 1.58 |
| comp65705\_c0\_orf1 | PREDICTED: retinol dehydrogenase 11-like isoform 1 | 1.56 |
| c52295\_g1 | GM24606p | 1.56 |
| comp41074\_c1\_orf1 | PREDICTED: small ubiquitin-related modifier-like | 1.56 |
| comp73324\_c0\_orf1 | PREDICTED: heterogeneous nuclear ribonucleoprotein K-like isoform 1 | 1.56 |
| c63913\_g1 | hypothetical protein KGM\_22666 | 1.55 |
| comp71123\_c1\_orf1 | PREDICTED: similar to AGAP010450-PA | 1.53 |
| c61923\_g1 | nuclear protein | 1.53 |
| comp58988\_c0\_orf1 | AAEL010801-PB | 1.53 |
| c69101\_g1 | - | 1.52 |
| comp52386\_c0\_orf1 | PREDICTED: DNA polymerase delta subunit 2-like | 1.51 |
| c57402\_g1 | hypothetical protein KGM\_07372 | 1.51 |
| c1880\_g1 | PREDICTED: protein LSM12 homolog | 1.51 |
| comp72848\_c1\_orf1 | conserved hypothetical protein | 1.5 |
| comp29955\_c0\_orf1 | ribosomal protein L28-like protein | 1.5 |
| c61399\_g1 | hypothetical protein KGM\_08367 | 1.5 |
| c60892\_g1 | - | 1.5 |
| comp72309\_c1\_orf1 | PREDICTED: similar to rab gdp/gtp exchange factor isoform 1 | 1.5 |
| fig|572265\_7\_peg\_974 | - | 1.49 |
| WP\_014895133\_1 | symbionin symS - pea aphid | 1.48 |
| c64336\_g1 | nuclear pore complex protein nup154, putative | 1.48 |
| c64603\_g2 | hypothetical protein DAPPUDRAFT\_42659 | 1.48 |
| comp67813\_c0\_orf1 | PREDICTED: hypothetical protein LOC100166909 | 1.48 |
| comp69806\_c0\_orf1 | organic cation transporter protein | 1.48 |
| c61487\_g1 | PREDICTED: similar to arginyl-tRNA synthetase | 1.46 |
| c70603\_g1 | - | 1.45 |
| c61243\_g1 | GI16849 | 1.45 |
| comp477134\_c0\_orf1 | PREDICTED: hemicentin-1-like isoform 2 | 1.45 |
| c59925\_g1 | 39S ribosomal protein L53, mitochondrial | 1.45 |
| c53473\_g1 | conserved hypothetical protein | 1.44 |
| comp64934\_c0\_orf1 | cysteine peptidase isoform b | 1.43 |
| comp69323\_c1 | - | 1.43 |
| comp71236\_c0\_orf1 | PREDICTED: surfeit locus protein 1-like | 1.42 |
| comp63595\_c0\_orf1 | PREDICTED: hypothetical protein LOC100166785 | 1.42 |
| comp71074\_c0\_orf1 | nucleolysin TIA-1, putative | 1.41 |
| comp70776\_c1\_orf1 | PREDICTED: protein alan shepard-like | 1.41 |
| comp380948\_c0\_orf1 | PREDICTED: laminin subunit alpha-like | 1.41 |
| c35339\_g1 | - | 1.41 |
| comp67133\_c0\_orf1 | PREDICTED: glucose dehydrogenase [acceptor]-like | 1.4 |
| c58916\_g1 | PREDICTED: blood vessel epicardial substance-like isoform 1 | 1.4 |
| comp56573\_c1\_orf1 | PREDICTED: dephospho-CoA kinase domain-containing protein-like | 1.4 |
| c57159\_g1 | GJ20513 | 1.4 |
| c16261\_g1 | PREDICTED: similar to maggie CG14981-PA | 1.39 |
| c22589\_g1 | - | 1.39 |
| c68917\_g1 | PREDICTED: rap guanine nucleotide exchange factor 6-like, partial | 1.38 |
| comp60414\_c0 | - | 1.38 |
| comp55754\_c0\_orf1 | conserved hypothetical protein | 1.38 |
| comp64164\_c0\_orf1 | lysine-specific histone demethylase, putative | 1.38 |
| c64891\_g1 | PREDICTED: similar to cuticular protein 127, RR-1 family (AGAP000344-PA) | 1.38 |
| comp73950\_c0 | - | 1.37 |
| comp68150\_c3\_orf1 | AGAP008876-PA | 1.37 |
| c1950\_g1 | putative ribosomal protein S25 | 1.37 |
| c69805\_g9 | ACYPI38240 | 1.37 |
| c68616\_g1 | - | 1.37 |
| comp68485\_c0\_orf1 | PREDICTED: short-chain dehydrogenase/reductase family 16C member 6-like isoform 1 | 1.37 |
| c61942\_g1 | - | 1.37 |
| c61447\_g1 | membrane-bound trehalase | 1.37 |
| comp72022\_c1\_orf1 | PREDICTED: four and a half LIM domains protein 2-like isoform 1 | 1.37 |
| comp70201\_c0\_orf1 | alkaline phosphatase | 1.36 |
| comp40980\_c0 | - | 1.36 |
| c62046\_g1 | unnamed protein product | 1.36 |
| comp250437\_c0\_orf1 | integrin alpha-PS2 precursor, putative | 1.36 |
| comp59163\_c0\_orf1 | conserved hypothetical protein | 1.36 |
| c30353\_g1 | orcokinin | 1.36 |
| comp69758\_c2\_orf1 | GK25645 | 1.36 |
| c68842\_g2 | PREDICTED: similar to groucho protein | 1.36 |
| c66344\_g1 | PREDICTED: heterogeneous nuclear ribonucleoprotein L-like | 1.36 |
| comp647510\_c0\_orf1 | hypothetical protein KGM\_12959 | 1.35 |
| comp68977\_c1\_orf1 | PREDICTED: serine/threonine-protein phosphatase 2B catalytic subunit 3-like | 1.35 |
| comp61375\_c0\_orf1 | hypothetical protein | 1.35 |
| c56539\_g1 | uncharacterized protein LOC100163911 | 1.35 |
| comp73307\_c0\_orf2 | PREDICTED: uncharacterized protein LOC100882936 | 1.35 |
| comp76302\_c0\_orf1 | membrane-associated protein, putative | 1.35 |
| c58919\_g1 | - | 1.34 |
| c68898\_g1 | PREDICTED: protein phosphatase methylesterase 1-like | 1.34 |
| comp73740\_c0\_orf1 | GK15947 | 1.34 |
| c65726\_g1 | PREDICTED: v-type proton ATPase 116 kDa subunit a isoform 1-like | 1.34 |
| c61021\_g1 | RNA polymerase-associated protein LEO1, putative | 1.34 |
| c64247\_g6 | hypothetical protein DAPPUDRAFT\_301871 | 1.34 |
| comp70962\_c0\_orf1 | flotillin-1 | 1.34 |
| comp70727\_c0\_orf1 | PREDICTED: rho guanine nucleotide exchange factor 7-like isoform 1 | 1.33 |
| c59202\_g1 | unknown | 1.33 |
| comp69879\_c0\_orf2 | adapter molecule Crk | 1.33 |
| c56034\_g1 | PREDICTED: hypothetical protein LOC409240 | 1.33 |
| c67538\_g1 | methionine sulfoxide reductase B3 isoform 1 | 1.33 |
| comp74180\_c0\_orf1 | PREDICTED: similar to AGAP010237-PA | 1.33 |
| comp65193\_c0\_orf1 | PREDICTED: similar to Sel1l protein | 1.33 |
| c121590\_g1 | hypothetical protein TcasGA2\_TC012992 | 1.33 |
| comp72185\_c0\_orf1 | PREDICTED: prostatic acid phosphatase-like | 1.33 |
| c64398\_g1 | PREDICTED: similar to CG3983 CG3983-PB | 1.33 |
| c70930\_g4 | - | 1.32 |
| comp40938\_c0\_orf1 | putative mitochondrial NADH dehydrogenase (ubiquinone) 1 alpha subcomplex | 1.32 |
| comp64445\_c0\_orf1 | CG12163, isoform B | 1.31 |
| comp73164\_c0\_orf1 | PREDICTED: phosphatidylethanolamine-binding protein homolog F40A3.3-like isoform 1 | 1.31 |
| c62186\_g1 | serine protease P150 | 1.31 |
| comp65735\_c0\_orf1 | Apoptosis regulator BAX | 1.31 |
| comp59031\_c0\_orf1 | PREDICTED: similar to predicted protein | 1.31 |
| comp66575\_c0\_orf1 | PREDICTED: ATP-binding cassette sub-family G member 1-like | 1.3 |
| comp67862\_c0\_orf1 | PREDICTED: UPF0451 protein C17orf61 homolog | 1.3 |
| comp65478\_c0\_orf1 | PREDICTED: clathrin light chain-like | 1.3 |
| comp61231\_c0\_orf1 | PREDICTED: hypothetical protein LOC100647906 | 1.3 |
| c25716\_g1 | low-density lipoprotein receptor, putative | 1.3 |
| c143871\_g1 | PREDICTED: muscle M-line assembly protein unc-89-like | 1.3 |
| c165725\_g1 | cathepsin B | 1.3 |
| comp65648\_c0\_orf1 | hypothetical protein TcasGA2\_TC004143 | 1.3 |
| comp52231\_c1\_orf1 | putative 60S ribosomal protein L13a | 1.3 |
| comp54332\_c0 | - | 1.29 |
| comp71764\_c0\_orf1 | PREDICTED: thiamin pyrophosphokinase 1-like | 1.29 |
| c59346\_g1 | actin [Ornithodoros moubata] | 1.29 |
| comp59039\_c0 | - | 1.29 |
| comp67502\_c0\_orf1 | PREDICTED: UDP-glucuronosyltransferase 1-7-like | 1.29 |
| c59013\_g1 | PREDICTED: protein jagunal-like | 1.29 |
| comp73100\_c2\_orf1 | GJ11709 | 1.29 |
| comp56451\_c0\_orf1 | PREDICTED: 60S ribosomal protein L7a-like | 1.28 |
| comp68746\_c0\_orf1 | hypothetical protein TcasGA2\_TC030780 | 1.28 |
| c59908\_g2 | PREDICTED: similar to AGAP008909-PA | 1.28 |
| comp70003\_c0\_orf1 | PREDICTED: CLIP-associating protein 1-like | 1.28 |
| c51220\_g1 | PREDICTED: icarapin-like | 1.28 |
| comp29968\_c0\_orf1 | PREDICTED: hypothetical protein LOC100746188 | 1.28 |
| c3648\_g1 | PREDICTED: similar to ATP synthase delta chain, mitochondrial | 1.28 |
| c65822\_g1 | - | 1.28 |
| comp67677\_c0\_orf1 | phosphatidylethanolamine-binding protein | 1.28 |
| comp40702\_c0\_orf1 | hypothetical protein DAPPUDRAFT\_110732 | 1.28 |
| comp70483\_c0\_orf1 | PREDICTED: similar to CG5758 CG5758-PA | 1.27 |
| c43129\_g1 | DPY-30 protein, putative | 1.27 |
| comp63139\_c0\_orf1 | 60S ribosomal protein L8-like | 1.27 |
| c48270\_g1 | ACYPI008219 | 1.27 |
| comp66975\_c0 | - | 1.27 |
| comp70976\_c0\_orf1 | lanosterol synthase | 1.27 |
| c57283\_g1 | translation elongation factor EF-1 alpha/Tu | 1.27 |
| comp75481\_c0\_orf1 | unknown | 1.27 |
| comp39853\_c0 | - | 1.26 |
| comp69527\_c0 | - | 1.26 |
| comp56975\_c0\_orf1 | histone H2AV | 1.26 |
| c69852\_g2 | sjoegren syndrome nuclear autoantigen 1-like protein | 1.26 |
| c54979\_g1 | C-terminal-binding protein | 1.26 |
| comp72119\_c0\_orf1 | stromal interaction molecule-like protein | 1.26 |
| comp59007\_c0\_orf1 | PREDICTED: ankyrin repeat and LEM domain-containing protein 2-like | 1.26 |
| comp69919\_c0\_orf1 | GI13082 | 1.26 |
| comp87167\_c0\_orf1 | hypothetical protein Phum\_PHUM213210 | 1.26 |
| comp74818\_c0\_orf1 | cd36 antigen | 1.26 |
| c59347\_g2 | gliotactin, isoform B | 1.26 |
| c69034\_g2 | PREDICTED: similar to AGAP006340-PC | 1.26 |
| c63762\_g1 | PREDICTED: hypothetical protein LOC100162711 | 1.25 |
| c68324\_g2 | unknown | 1.25 |
| c59487\_g1 | PREDICTED: hypothetical protein LOC100570329 | 1.25 |
| comp71783\_c1\_orf1 | putative chemosensory protein CSP6 | 1.25 |
| c182532\_g1 | GMP synthetase, putative | 1.25 |
| comp74664\_c0\_orf1 | PREDICTED: ras-related protein Rap-2c-like | 1.25 |
| comp62073\_c0\_orf1 | PREDICTED: exocyst complex component 6B-like isoform 2 | 1.25 |
| WP\_014895142\_1 | - | 1.25 |
| comp61957\_c0 | - | 1.25 |
| c44482\_g1 | PREDICTED: proteasome subunit alpha type-3-like | 1.25 |
| comp64227\_c0\_orf1 | PREDICTED: similar to reticulocalbin | 1.25 |
| c70349\_g1 | cysteine string protein | 1.25 |
| comp61331\_c0\_orf1 | PREDICTED: L-lactate dehydrogenase-like | 1.25 |
| c44015\_g1 | PREDICTED: tropomyosin-2-like isoform 2 | 1.25 |
| c57836\_g3 | PREDICTED: hypothetical protein LOC100744819 | 1.25 |
| comp70552\_c0\_orf1 | PREDICTED: transaldolase-like | 1.24 |
| c59173\_g1 | PREDICTED: hypothetical protein LOC100165581 | 1.24 |
| comp70406\_c0\_orf1 | PREDICTED: similar to DEAD-box RNA-dependent helicase p68 | 1.24 |
| comp74497\_c0\_orf1 | tdrd7 | 1.24 |
| c62440\_g1 | - | 1.24 |
| comp75391\_c0\_orf1 | PREDICTED: proteasome subunit alpha type-4-like | 1.24 |
| c62422\_g1 | PREDICTED: n-acetyl-D-glucosamine kinase-like isoform 1 | 1.24 |
| c70690\_g1 | argonaute-2 | 1.24 |
| c56074\_g1 | - | 1.24 |
| comp303744\_c0 | - | 1.24 |
| comp29923\_c0\_orf1 | PREDICTED: similar to GA20229-PA | 1.24 |
| c64649\_g2 | innexin | 1.24 |
| c64886\_g1 | PREDICTED: hypothetical protein LOC100645428 | 1.24 |
| comp73793\_c0\_orf1 | AGAP003371-PA | 1.24 |
| c67078\_g1 | - | 1.24 |
| c65910\_g1 | PREDICTED: pumilio homolog 2-like isoform 1 | 1.24 |
| comp59451\_c0\_orf1 | PREDICTED: G-protein coupled receptor 143-like | 1.24 |
| c67248\_g1 | PREDICTED: hypothetical protein LOC100167398 | 1.24 |
| c65285\_g4 | PREDICTED: mitochondrial folate transporter/carrier-like | 1.24 |
| c66277\_g2 | cathepsin B-5880 precursor | 1.24 |
| comp53394\_c0\_orf1 | NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11 | 1.24 |
| comp73790\_c0\_orf1 | phosphatidylinositol-4-phosphate 5-kinase type-1 alpha | 1.24 |
| c70499\_g1 | DD5 | 1.23 |
| c66715\_g2 | basigin precursor, putative | 1.23 |
| c62328\_g1 | hypothetical protein DAPPUDRAFT\_329664 | 1.23 |
| c49442\_g1 | putative ATP synthase oligomycin sensitivity conferral protein | 1.23 |
| comp73879\_c0\_orf1 | PREDICTED: transient receptor potential cation channel protein painless-like isoform 1 | 1.23 |
| comp74141\_c2\_orf1 | ACYPI003875 | 1.23 |
| comp59266\_c0\_orf1 | PREDICTED: galactokinase-like | 1.23 |
| c70870\_g1 | phosphatidylethanolamine-binding protein | 1.23 |
| comp65802\_c0\_orf1 | PREDICTED: similar to succinate semialdehyde dehydrogenase, mitochondrial | 1.23 |
| comp52413\_c0\_orf1 | chickadee | 1.23 |
| comp70509\_c0\_orf1 | PREDICTED: hypothetical protein LOC100167736 | 1.23 |
| c56033\_g1 | PREDICTED: similar to metaxin 2 | 1.23 |
| c67154\_g1 | PREDICTED: replication factor C subunit 5-like | 1.23 |
| c60978\_g1 | PREDICTED: u4/U6.U5 tri-snRNP-associated protein 2-like | 1.23 |
| c50242\_g1 | PREDICTED: hypothetical protein LOC100161256 | 1.23 |
| c70259\_g2 | PREDICTED: septin-4-like | 1.23 |
| c25195\_g1 | AAEL001615-PA | 1.23 |
| comp74268\_c0\_orf1 | PREDICTED: phosphatidylethanolamine-binding protein homolog F40A3.3-like isoform 2 | 1.23 |
| c67481\_g1 | AGAP009234-PA | 1.23 |
| comp69314\_c0\_orf2 | PREDICTED: hypothetical protein LOC100572493 | 1.22 |
| c66419\_g1 | arginine/serine-rich splicing factor, putative | 1.22 |
| comp64613\_c0\_orf1 | takeout/JHBP like protein | 1.22 |
| comp53515\_c0\_orf1 | PREDICTED: similar to phosphoacetylglucosamine mutase | 1.22 |
| comp56996\_c0\_orf1 | AGAP006179-PB | 1.22 |
| c66598\_g1 | hypothetical protein TcasGA2\_TC007283 | 1.22 |
| c55942\_g1 | PREDICTED: proteasomal ubiquitin receptor ADRM1-like | 1.22 |
| c61881\_g1 | PREDICTED: acetylserotonin O-methyltransferase-like | 1.22 |
| c62318\_g1 | hypothetical protein KGM\_10424 | 1.22 |
| comp70499\_c1\_orf1 | GF24985 | 1.22 |
| comp56704\_c0\_orf1 | PREDICTED: peptidyl-prolyl cis-trans isomerase B-like | 1.22 |
| c45814\_g1 | juvenile hormone binding protein | 1.22 |
| comp71497\_c1\_orf1 | PREDICTED: cAMP-dependent protein kinase catalytic subunit-like | 1.22 |
| comp74212\_c0\_orf1 | PREDICTED: protein retinal degeneration B-like | 1.21 |
| comp67785\_c0\_orf1 | replication protein A 70 kDa DNA-binding subunit | 1.21 |
| c51152\_g1 | DEAD box ATP-dependent RNA helicase | 1.21 |
| c59207\_g2 | - | 1.21 |
| comp65336\_c0\_orf1 | - | 1.21 |
| c60853\_g1 | hemocyte aggregation inhibitor protein precursor | 1.21 |
| comp69458\_c0\_orf1 | gamma-soluble NSF attachment protein, putative | 1.21 |
| c62324\_g1 | PREDICTED: zinc finger protein 161 homolog | 1.21 |
| c67854\_g1 | PREDICTED: similar to CG3662 CG3662-PA | 1.21 |
| comp74934\_c0\_orf1 | PREDICTED: hypothetical protein LOC100168823 | 1.21 |
| comp39103\_c1\_orf1 | fasciclin-1 | 1.21 |
| c67573\_g1 | - | 1.21 |
| comp45791\_c0\_orf1 | cuticular protein | 1.21 |
| comp69511\_c0\_orf1 | PREDICTED: transcriptional regulator ATRX homolog | 1.21 |
| comp73479\_c0\_orf1 | vacuolar ATP synthase subunit S1, putative | 1.21 |
| c66686\_g2 | - | 1.21 |
| c55056\_g1 | PREDICTED: similar to XPA-binding protein 2 | 1.21 |
| comp74041\_c0\_orf1 | RNA polymerase II second largest subunit | 1.21 |
| c58687\_g1 | PREDICTED: nucleoporin p58/p45 | 1.21 |
| comp66291\_c0\_orf1 | import inner membrane translocase subunit TIM50-C, putative | 1.21 |
| c65657\_g2 | PREDICTED: hypothetical protein LOC724126 | 1.21 |
| c66786\_g2 | Thyroid peroxidase precursor, putative | 1.21 |
| c60036\_g1 | FAD oxidoreductase | 1.21 |
| c64864\_g1 | PREDICTED: retinol dehydrogenase 14-like | 1.21 |
| comp73638\_c1\_orf1 | hypothetical protein DAPPUDRAFT\_311676 | 1.21 |
| c70943\_g2 | transmembrane protein 62 | 1.21 |
| comp73661\_c0\_orf1 | PREDICTED: splicing factor 3A subunit 1 | 1.21 |
| comp61973\_c0\_orf1 | dual specificity protein phosphatase CDC14A | 1.21 |
| c36035\_g1 | - | 1.21 |
| c59927\_g1 | PREDICTED: probable enoyl-CoA hydratase, mitochondrial-like | 1.21 |
| c32538\_g1 | - | 1.21 |
| comp70989\_c0\_orf1 | PREDICTED: hypothetical protein LOC100748451 | 1.21 |
| **Down-regulated** |  |  |
| comp55351\_c0\_orf1 | actin type 2 | 0.34 |
| comp1063366\_c0\_orf1 | ADP/ATP-carrier protein, partial | 0.45 |
| comp72200\_c4\_orf2 | putative histidine triad protein member | 0.63 |
| c63442\_g1 | PREDICTED: ADP-ribosylation factor-like protein 1-like isoform 1 | 0.65 |
| c68307\_g2 | hypothetical protein TcasGA2\_TC009928 | 0.66 |
| c68060\_g1 | PREDICTED: hypothetical protein LOC100164562 | 0.69 |
| c69608\_g1 | PREDICTED: neurexin-4-like | 0.69 |
| comp68396\_c0\_orf1 | hypothetical protein TcasGA2\_TC005739 | 0.7 |
| c68821\_g2 | ptpla domain protein, putative | 0.7 |
| c62307\_g1 | PREDICTED: myosin heavy chain, muscle isoform 1 | 0.7 |
| comp65762\_c0\_orf1 | PREDICTED: myosin heavy chain, muscle isoform 1 | 0.71 |
| comp70145\_c0\_orf1 | phosphatidylethanolamine-binding protein | 0.71 |
| comp70602\_c0\_orf1 | PREDICTED: ankyrin repeat domain-containing protein 13C-like | 0.72 |
| comp61171\_c0\_orf1 | unnamed protein product | 0.72 |
| c53347\_g1 | PREDICTED: band 4.1-like protein 5-like | 0.72 |
| c56365\_g1 | eukaryotic translation initiation factor 3 subunit 12-like protein | 0.73 |
| c63198\_g1 | PREDICTED: CCR4-NOT transcription complex subunit 7-like | 0.73 |
| c65809\_g1 | PREDICTED: cullin-3-A-like | 0.73 |
| c11466\_g1 | - | 0.73 |
| c63800\_g2 | lysosomal acid phosphatase precursor, putative | 0.74 |
| comp29924\_c0\_orf1 | hypothetical protein CAPTEDRAFT\_50237, partial | 0.74 |
| comp70583\_c2\_orf1 | PREDICTED: presqualene diphosphate phosphatase-like | 0.75 |
| c65252\_g1 | hypothetical protein TcasGA2\_TC008304 | 0.75 |
| c50713\_g1 | PREDICTED: 3-ketodihydrosphingosine reductase-like | 0.75 |
| c73842\_g1 | PREDICTED: hypothetical protein LOC100568595 isoform 1 | 0.75 |
| comp72159\_c1\_orf1 | GF11454 | 0.75 |
| c67690\_g2 | hypothetical protein BRAFLDRAFT\_66468 | 0.76 |
| c57778\_g1 | hypothetical protein TcasGA2\_TC013249 | 0.76 |
| comp74297\_c0\_orf1 | PREDICTED: similar to membrin | 0.76 |
| c50021\_g1 | PREDICTED: cytochrome b-c1 complex subunit 9-like | 0.77 |
| c58929\_g2 | PREDICTED: ras-related protein Rab-39B-like | 0.77 |
| c63168\_g2 | PREDICTED: ATP-binding cassette sub-family G member 4-like isoform 1 | 0.77 |
| c60020\_g1 | serine/threonine-protein phosphatase alpha-1 isoform | 0.77 |
| comp72495\_c0\_orf1 | PREDICTED: probable maltase L-like | 0.77 |
| comp68321\_c0\_orf1 | male sterility domain-containing protein, putative | 0.77 |
| c61534\_g1 | GF16442 | 0.77 |
| c58571\_g1 | phosphatidylethanolamine-binding protein | 0.78 |
| comp70166\_c0 | - | 0.78 |
| c59635\_g1 | hypothetical protein SINV\_08840 | 0.78 |
| comp59684\_c0\_orf1 | glutathione S transferase class delta variant 1 | 0.78 |
| c66083\_g1 | PREDICTED: congested-like trachea protein-like | 0.78 |
| c15820\_g1 | predicted protein | 0.78 |
| WP\_014894974\_1 | hypothetical protein CAPTEDRAFT\_97159, partial | 0.78 |
| comp65316\_c0\_orf1 | N-acetyltransferase-like | 0.78 |
| comp4183\_c0\_orf1 | predicted protein | 0.78 |
| comp74336\_c0\_orf1 | PREDICTED: c-myc promoter-binding protein-like isoform 2 | 0.78 |
| WP\_014895007\_1 | PREDICTED: 30S ribosomal protein S5-like, partial | 0.79 |
| c68819\_g1 | sucrase | 0.79 |
| c48683\_g1 | hypothetical protein DAPPUDRAFT\_332854 | 0.79 |
| c6484\_g1 | PREDICTED: probable ATP-dependent RNA helicase DHX36-like | 0.79 |
| c70620\_g2 | hypothetical protein TcasGA2\_TC009928 | 0.79 |
| comp68198\_c0\_orf1 | hydroxymethylglutaryl-CoA synthase 1 | 0.79 |
| c182801\_g1 | PREDICTED: nipped-B-like protein | 0.79 |
| c62963\_g1 | PREDICTED: twinkle protein, mitochondrial-like | 0.79 |
| c66721\_g6 | PREDICTED: acyl-CoA:lysophosphatidylglycerol acyltransferase 1-like isoform 1 | 0.79 |
| c42656\_g1 | 14-3-3 zeta | 0.79 |
| c48872\_g1 | predicted protein | 0.79 |
| comp29864\_c0 | - | 0.8 |
| comp71603\_c2\_orf1 | PREDICTED: u3 small nucleolar RNA-associated protein 6 homolog | 0.8 |
| comp71500\_c0\_orf2 | PREDICTED: similar to AGAP004772-PA | 0.8 |
| comp74503\_c0\_orf1 | hypothetical protein TcasGA2\_TC008454 | 0.8 |
| c60302\_g1 | PREDICTED: hypothetical protein LOC100161931 | 0.8 |
| c69473\_g7 | hypothetical protein KGM\_15082 | 0.8 |
| WP\_014975147\_1 | 2-oxoglutarate dehydrogenase, E2 component, dihydrolipoamide succinyltransferase family protein | 0.8 |
| c63706\_g1 | hypothetical protein KGM\_22037 | 0.8 |
| comp74690\_c0\_orf1 | hypothetical protein TcasGA2\_TC003675 | 0.8 |
| c56868\_g1 | AAEL006847-PA | 0.8 |
| comp70000\_c0\_orf1 | C-factor, putative | 0.8 |
| comp70633\_c0\_orf1 | PREDICTED: phosphatidylethanolamine-binding protein homolog F40A3.3-like isoform 1 | 0.8 |
| comp70158\_c0\_orf1 | PREDICTED: cryptochrome-1-like | 0.8 |
| c63526\_g1 | hypothetical protein TcasGA2\_TC010433 | 0.8 |
| c64619\_g1 | AGAP005490-PA | 0.8 |
| c65561\_g2 | ras-related protein Rab-21 | 0.81 |
| comp75854\_c0\_orf1 | wd-repeat protein | 0.81 |
| comp46864\_c1\_orf1 | PREDICTED: phosphatidylinositol 4-kinase alpha-like isoform 2 | 0.81 |
| comp58269\_c0\_orf1 | PREDICTED: 5-formyltetrahydrofolate cyclo-ligase-like | 0.81 |
| c66630\_g1 | COE2, partial | 0.81 |
| c51005\_g1 | GM13182 | 0.81 |
| c62825\_g1 | nicotinamide riboside kinase 1 | 0.81 |
| c63033\_g2 | PREDICTED: LOW QUALITY PROTEIN: JNK-interacting protein 3-like | 0.81 |
| comp64520\_c1\_orf1 | predicted protein | 0.81 |
| comp62425\_c0 | - | 0.81 |
| comp68395\_c0\_orf1 | PREDICTED: SEC14-like protein 3-like | 0.81 |
| c49542\_g1 | enolase 3 | 0.81 |
| c64645\_g1 | PREDICTED: CCR4-NOT transcription complex subunit 1 isoform 1 | 0.81 |
| c69370\_g1 | PREDICTED: barrier-to-autointegration factor-like | 0.81 |
| c36654\_g1 | PREDICTED: UPF0545 protein C22orf39 homolog | 0.81 |
| c68226\_g2 | PREDICTED: similar to AGAP001629-PA | 0.81 |
| c62530\_g1 | PREDICTED: 39S ribosomal protein L35, mitochondrial-like | 0.81 |
| c51011\_g1 | ribosomal protein S15Aa, isoform D | 0.81 |
| c70031\_g3 | hypothetical protein SINV\_04921 | 0.82 |
| c67933\_g1 | double-stranded RNA-specific editase Adar | 0.82 |
| c67753\_g1 | PREDICTED: venom protease-like | 0.82 |
| c67727\_g1 | - | 0.82 |
| comp68540\_c0\_orf1 | PREDICTED: similar to AGAP010217-PA | 0.82 |
| c68792\_g2 | PREDICTED: UPF0160 protein MYG1, mitochondrial-like | 0.82 |
| comp74956\_c0\_orf1 | PREDICTED: nuclear pore membrane glycoprotein 210-like | 0.82 |
| c57846\_g1 | - | 0.82 |
| comp76071\_c0\_orf1 | conserved hypothetical protein | 0.82 |
| c66619\_g4 | PREDICTED: similar to CG9723 CG9723-PA | 0.82 |
| comp57981\_c0\_orf1 | PREDICTED: probable ATP-dependent RNA helicase kurz-like | 0.82 |
| comp72004\_c0\_orf1 | alpha tocopherol transfer protein | 0.82 |
| comp63036\_c0\_orf1 | hypothetical protein SINV\_07726 | 0.82 |
| c63669\_g1 | - | 0.82 |
| comp66616\_c0\_orf1 | WD repeat domain phosphoinositide-interacting protein 3 | 0.82 |
| comp67726\_c0\_orf1 | PREDICTED: cell division cycle protein 23 homolog | 0.83 |
| c67391\_g1 | PREDICTED: mesencephalic astrocyte-derived neurotrophic factor homolog | 0.83 |
| comp74768\_c0\_orf1 | PREDICTED: sodium-independent sulfate anion transporter-like | 0.83 |
| comp72876\_c0\_orf1 | PREDICTED: similar to AGAP004271-PA | 0.83 |
| comp56726\_c0\_orf1 | Probable RNA helicase armi | 0.83 |
| comp63275\_c0 | - | 0.83 |
| c67958\_g1 | PREDICTED: cysteinyl-tRNA synthetase, cytoplasmic-like | 0.83 |
| c20911\_g1 | chaperonin containing TCP1 | 0.83 |
| comp67937\_c0\_orf1 | aminopeptidase-like protein | 0.83 |
| c68529\_g2 | - | 0.83 |
| c49494\_g2 | trehalose 6-phosphate synthase | 0.83 |
| c44954\_g1 | PREDICTED: similar to nicotinamide mononucleotide adenylyltransferase 1 | 0.83 |
| comp70328\_c0\_orf1 | Density-regulated protein | 0.83 |
| comp72307\_c0\_orf1 | E3 ubiquitin-protein ligase RNF8 | 0.83 |
| comp64425\_c1\_orf1 | vitellogenin | 0.83 |
| comp41131\_c0\_orf1 | uncharacterized protein LOC100161110 | 0.83 |
| c50023\_g1 | putative mitochondrial ribosomal protein, L37 | 0.83 |
| c46360\_g1 | PREDICTED: hypothetical protein LOC100161842 | 0.83 |
| c63618\_g1 | - | 0.83 |
| c68972\_g2 | PREDICTED: succinate-semialdehyde dehydrogenase, mitochondrial-like isoform 1 | 0.83 |
| comp580790\_c0\_orf1 | actin | 0.83 |
| c61767\_g1 | PREDICTED: protein-tyrosine phosphatase mitochondrial 1-like protein-like | 0.83 |
| comp75277\_c0\_orf1 | uncharacterized protein LOC100165200 | 0.83 |
| c64033\_g2 | aminoacyl tRNA synthase complex-interacting multifunctional protein 1 | 0.83 |
| comp69173\_c0\_orf1 | histone H3.3 | 0.83 |

**Table S4. DEPs identified in the comparison of TYLCV-infected vs. PaLCuCNV-infected.**

|  |  |  |
| --- | --- | --- |
| **Protein ID** | **Protein name** | **Fold change** |
| **Up-regulated** |  |  |
| comp55351\_c0\_orf1 | actin type 2 | 2.75 |
| comp1063366\_c0\_orf1 | ADP/ATP-carrier protein, partial | 2.6 |
| c63669\_g1 | - | 1.49 |
| c49925\_g1 | PREDICTED: mediator of RNA polymerase II transcription subunit 18-like | 1.47 |
| c63033\_g2 | PREDICTED: LOW QUALITY PROTEIN: JNK-interacting protein 3-like | 1.33 |
| comp29924\_c0\_orf1 | hypothetical protein CAPTEDRAFT\_50237, partial | 1.33 |
| c42916\_g1 | transcription factor btf3, putative | 1.31 |
| comp41484\_c0\_orf1 | PREDICTED: probable uridine-cytidine kinase-like isoform 2 | 1.3 |
| comp73512\_c0\_orf1 | hypothetical protein SINV\_15050 | 1.3 |
| comp74297\_c0\_orf1 | PREDICTED: similar to membrin | 1.3 |
| c68868\_g2 | - | 1.29 |
| comp61327\_c0\_orf1 | Probable ubiquitin carboxyl-terminal hydrolase FAF-X | 1.27 |
| comp72049\_c0\_orf1 | PREDICTED: putative serine protease K12H4.7-like | 1.27 |
| c66072\_g1 | PREDICTED: RNA 3'-terminal phosphate cyclase-like protein-like | 1.27 |
| c70031\_g3 | hypothetical protein SINV\_04921 | 1.25 |
| c67933\_g1 | double-stranded RNA-specific editase Adar | 1.25 |
| c121343\_g1 | - | 1.25 |
| c69505\_g1 | PREDICTED: conserved oligomeric Golgi complex subunit 5-like | 1.25 |
| comp67338\_c1\_orf1 | UBX domain-containing protein 1 | 1.25 |
| c65325\_g2 | - | 1.24 |
| comp74768\_c0\_orf1 | PREDICTED: sodium-independent sulfate anion transporter-like | 1.24 |
| comp41022\_c0\_orf1 | vitellogenin-1 | 1.24 |
| c72114\_g1 | predicted protein | 1.24 |
| comp68396\_c0\_orf1 | hypothetical protein TcasGA2\_TC005739 | 1.23 |
| comp69033\_c2\_orf1 | hexamerin 1 | 1.23 |
| comp68198\_c0\_orf1 | hydroxymethylglutaryl-CoA synthase 1 | 1.23 |
| c66407\_g1 | U1 small nuclear ribonucleoprotein 70 kDa | 1.23 |
| c55481\_g1 | armadillo protein | 1.23 |
| comp68540\_c0\_orf1 | PREDICTED: similar to AGAP010217-PA | 1.22 |
| c182801\_g1 | PREDICTED: nipped-B-like protein | 1.22 |
| comp73656\_c0\_orf1 | PREDICTED: acetyl-CoA carboxylase-like isoform 1 | 1.22 |
| c63201\_g1 | PREDICTED: WD40 repeat-containing protein SMU1-like isoform 1 | 1.22 |
| comp70158\_c0\_orf1 | PREDICTED: cryptochrome-1-like | 1.22 |
| comp60560\_c0\_orf1 | COP9 signalosome complex subunit, putative | 1.21 |
| comp64370\_c0\_orf1 | PREDICTED: hypothetical protein LOC100573127 | 1.21 |
| c62081\_g1 | PREDICTED: uncharacterized protein C9E9.15-like | 1.21 |
| **Down-regulated** |  |  |
| c61139\_g1 | PREDICTED: protein msta, isoform B-like | 0.51 |
| c56768\_g1 | actin | 0.56 |
| c44423\_g2 | hypothetical protein DAPPUDRAFT\_307391 | 0.64 |
| c61960\_g2 | hypothetical protein SINV\_08125 | 0.65 |
| comp71123\_c1\_orf1 | PREDICTED: similar to AGAP010450-PA | 0.71 |
| c66619\_g3 | PREDICTED: polypyrimidine tract-binding protein 1-like isoform 2 | 0.73 |
| comp70201\_c0\_orf1 | alkaline phosphatase | 0.75 |
| c61399\_g1 | hypothetical protein KGM\_08367 | 0.75 |
| comp72649\_c0\_orf1 | PREDICTED: hypothetical protein LOC100114451 | 0.75 |
| comp61331\_c0\_orf1 | PREDICTED: L-lactate dehydrogenase-like | 0.75 |
| comp65648\_c0\_orf1 | hypothetical protein TcasGA2\_TC004143 | 0.76 |
| comp69758\_c2\_orf1 | GK25645 | 0.77 |
| comp69806\_c0\_orf1 | organic cation transporter protein | 0.77 |
| comp71459\_c0\_orf1 | peroxiredoxin-like protein | 0.78 |
| c58687\_g1 | PREDICTED: nucleoporin p58/p45 | 0.78 |
| comp72022\_c1\_orf1 | PREDICTED: four and a half LIM domains protein 2-like isoform 1 | 0.79 |
| comp73307\_c0\_orf2 | PREDICTED: uncharacterized protein LOC100882936 | 0.8 |
| comp41725\_c0\_orf1 | PREDICTED: CDP-diacylglycerol--glycerol-3-phosphate 3-phosphatidyltransferase, mitochondrial-like | 0.8 |
| c70086\_g1 | hypothetical protein TcasGA2\_TC004221 | 0.81 |
| c59173\_g1 | PREDICTED: hypothetical protein LOC100165581 | 0.81 |
| c55687\_g1 | protein farnesyltransferase/geranylgeranyltransferase type-1 subunit alpha | 0.81 |
| comp68870\_c3\_orf2 | PREDICTED: COMM domain-containing protein 8 | 0.81 |
| comp65464\_c0\_orf1 | leucine carboxyl methyltransferase | 0.81 |
| comp64934\_c0\_orf1 | cysteine peptidase isoform b | 0.82 |
| comp60292\_c0\_orf1 | cathepsin B | 0.82 |
| c61487\_g1 | PREDICTED: similar to arginyl-tRNA synthetase | 0.82 |
| comp71870\_c0\_orf1 | PREDICTED: similar to sulfate transporter | 0.82 |
| c62273\_g1 | PREDICTED: dymeclin-like | 0.82 |
| comp67904\_c0\_orf1 | leucine-rich repeat-containing protein 57 | 0.83 |
| comp65585\_c0\_orf1 | PREDICTED: hypothetical protein | 0.83 |
| WP\_014895153\_1 | PREDICTED: 30S ribosomal protein S9-like | 0.83 |
| c53473\_g1 | conserved hypothetical protein | 0.83 |
| c70690\_g1 | argonaute-2 | 0.83 |
| comp67364\_c0\_orf1 | PREDICTED: ribosomal protein S6 kinase alpha-3-like isoform 1 | 0.83 |
| comp76311\_c0\_orf1 | PREDICTED: similar to synaptobrevin | 0.83 |
| c60892\_g1 | - | 0.83 |
| comp66750\_c0\_orf1 | PREDICTED: dolichyl-diphosphooligosaccharide--protein glycosyltransferase 48 kDa subunit-like | 0.83 |
| c50035\_g1 | PREDICTED: alpha-tocopherol transfer protein-like | 0.83 |