**Table S7. DEPs between S-morph and L-morph flowers enriched in each pathway during maturity.**

|  |  |  |
| --- | --- | --- |
| **No.** | **Pathway** | **Proteins** |
| 1 | Ribosome | Sme2.5\_01984.1\_g00005.1, Sme2.5\_00179.1\_g00004.1, Sme2.5\_00076.1\_g00003.1, Sme2.5\_01374.1\_g00009.1, Sme2.5\_06227.1\_g00005.1, Sme2.5\_00942.1\_g00003.1, Sme2.5\_00310.1\_g00014.1, Sme2.5\_06364.1\_g00001.1, Sme2.5\_00676.1\_g00001.1, Sme2.5\_01952.1\_g00004.1, Sme2.5\_00594.1\_g00001.1, Sme2.5\_00151.1\_g00009.1, Sme2.5\_00281.1\_g00013.1, Sme2.5\_00265.1\_g00010.1, Sme2.5\_00343.1\_g00001.1, Sme2.5\_30393.1\_g00001.1, Sme2.5\_02308.1\_g00006.1, Sme2.5\_01918.1\_g00003.1, Sme2.5\_03836.1\_g00005.1, Sme2.5\_02632.1\_g00002.1, Sme2.5\_00108.1\_g00014.1, Sme2.5\_01494.1\_g00003.1, Sme2.5\_00026.1\_g00018.1, Sme2.5\_09948.1\_g00002.1, Sme2.5\_06588.1\_g00003.1, Sme2.5\_00079.1\_g00001.1, Sme2.5\_00940.1\_g00015.1, Sme2.5\_02268.1\_g00004.1, Sme2.5\_15806.1\_g00001.1, Sme2.5\_00423.1\_g00008.1, Sme2.5\_00036.1\_g00030.1, Sme2.5\_00014.1\_g00037.1, Sme2.5\_00088.1\_g00019.1 |
| 2 | Starch and sucrose metabolism | Sme2.5\_09773.1\_g00001.1, Sme2.5\_02083.1\_g00006.1, Sme2.5\_00188.1\_g00004.1, Sme2.5\_12729.1\_g00004.1, Sme2.5\_00086.1\_g00011.1, Sme2.5\_00086.1\_g00012.1, Sme2.5\_10801.1\_g00001.1, Sme2.5\_00223.1\_g00004.1, Sme2.5\_01618.1\_g00012.1, Sme2.5\_01764.1\_g00007.1, Sme2.5\_03252.1\_g00002.1, Sme2.5\_14644.1\_g00002.1, Sme2.5\_04720.1\_g00004.1, Sme2.5\_05142.1\_g00002.1, Sme2.5\_05614.1\_g00005.1, Sme2.5\_00188.1\_g00003.1, Sme2.5\_07124.1\_g00003.1, Sme2.5\_01674.1\_g00010.1, Sme2.5\_12240.1\_g00001.1 |
| 3 | Pentose and glucuronate interconversions | Sme2.5\_09773.1\_g00001.1, Sme2.5\_02083.1\_g00006.1, Sme2.5\_00188.1\_g00004.1, Sme2.5\_10801.1\_g00001.1, Sme2.5\_00223.1\_g00004.1, Sme2.5\_01618.1\_g00012.1, Sme2.5\_03252.1\_g00002.1, Sme2.5\_00188.1\_g00003.1 |
| 4 | Phenylpropanoid biosynthesis | Sme2.5\_30554.1\_g00001.1, Sme2.5\_12729.1\_g00004.1, Sme2.5\_01764.1\_g00007.1, Sme2.5\_14644.1\_g00002.1, Sme2.5\_00001.1\_g00048.1, Sme2.5\_02369.1\_g00001.1, Sme2.5\_04720.1\_g00004.1, Sme2.5\_00776.1\_g00002.1, Sme2.5\_02584.1\_g00008.1, Sme2.5\_05614.1\_g00005.1, Sme2.5\_12240.1\_g00001.1 |
| 5 | Cyanoamino acid metabolism | Sme2.5\_12729.1\_g00004.1, Sme2.5\_01764.1\_g00007.1, Sme2.5\_14644.1\_g00002.1, Sme2.5\_04720.1\_g00004.1, Sme2.5\_05614.1\_g00005.1, Sme2.5\_12240.1\_g00001.1 |
| 6 | Flavonoid biosynthesis | Sme2.5\_00188.1\_g00020.1, Sme2.5\_00015.1\_g00020.1, Sme2.5\_00001.1\_g00048.1, Sme2.5\_00776.1\_g00002.1, Sme2.5\_01638.1\_g00005.1 |
| 7 | Proteasome | Sme2.5\_02098.1\_g00007.1, Sme2.5\_03722.1\_g00006.1, Sme2.5\_02533.1\_g00006.1, Sme2.5\_06455.1\_g00005.1, Sme2.5\_02824.1\_g00005.1 |
| 8 | Sesquiterpenoid and triterpenoid biosynthesis | Sme2.5\_21139.1\_g00001.1 |
| 9 | Stilbenoid, diarylheptanoid and gingerol biosynthesis | Sme2.5\_00001.1\_g00048.1, Sme2.5\_00776.1\_g00002.1 |
| 10 | Isoquinoline alkaloid biosynthesis | Sme2.5\_25992.1\_g00001.1, Sme2.5\_11776.1\_g00001.1 |
| 11 | Metabolic pathways (no map in kegg database) | Sme2.5\_09773.1\_g00001.1, Sme2.5\_02083.1\_g00006.1, Sme2.5\_00065.1\_g00022.1, Sme2.5\_00188.1\_g00020.1, Sme2.5\_00188.1\_g00004.1, Sme2.5\_00188.1\_g00008.1, Sme2.5\_03722.1\_g00005.1, Sme2.5\_02187.1\_g00002.1, Sme2.5\_01431.1\_g00003.1, Sme2.5\_07288.1\_g00002.1, Sme2.5\_25992.1\_g00001.1, Sme2.5\_30554.1\_g00001.1, Sme2.5\_12729.1\_g00004.1, Sme2.5\_00086.1\_g00011.1, Sme2.5\_00086.1\_g00012.1, Sme2.5\_10801.1\_g00001.1, Sme2.5\_00223.1\_g00004.1, Sme2.5\_02955.1\_g00005.1, Sme2.5\_01618.1\_g00012.1, Sme2.5\_04696.1\_g00001.1, Sme2.5\_00377.1\_g00016.1, Sme2.5\_01764.1\_g00007.1, Sme2.5\_03252.1\_g00002.1, Sme2.5\_14644.1\_g00002.1, Sme2.5\_00015.1\_g00020.1, Sme2.5\_00097.1\_g00005.1, Sme2.5\_00001.1\_g00048.1, Sme2.5\_07653.1\_g00001.1, Sme2.5\_02369.1\_g00001.1, Sme2.5\_01701.1\_g00006.1, Sme2.5\_13015.1\_g00001.1, Sme2.5\_01826.1\_g00003.1, Sme2.5\_00499.1\_g00004.1, Sme2.5\_00188.1\_g00007.1, Sme2.5\_04720.1\_g00004.1, Sme2.5\_00162.1\_g00020.1, Sme2.5\_00776.1\_g00002.1, Sme2.5\_03911.1\_g00003.1, Sme2.5\_02584.1\_g00008.1, Sme2.5\_00026.1\_g00001.1, Sme2.5\_05142.1\_g00002.1, Sme2.5\_11776.1\_g00001.1, Sme2.5\_05614.1\_g00005.1, Sme2.5\_00813.1\_g00013.1, Sme2.5\_00188.1\_g00003.1, Sme2.5\_01638.1\_g00005.1, Sme2.5\_07124.1\_g00003.1, Sme2.5\_01674.1\_g00010.1, Sme2.5\_05293.1\_g00002.1, Sme2.5\_12240.1\_g00001.1, Sme2.5\_01731.1\_g00001.1, Sme2.5\_05365.1\_g00004.1, Sme2.5\_00118.1\_g00007.1 |
| 12 | Taurine and hypotaurine metabolism | Sme2.5\_00499.1\_g00004.1 |
| 13 | Terpenoid backbone biosynthesis | Sme2.5\_21139.1\_g00001.1, Sme2.5\_01764.1\_g00007.1, Sme2.5\_04720.1\_g00004.1 |
| 14 | Anthocyanin biosynthesis | Sme2.5\_02148.1\_g00009.1 |
| 15 | Glycerolipid metabolism | Sme2.5\_01764.1\_g00007.1, Sme2.5\_04720.1\_g00004.1, Sme2.5\_12240.1\_g00001.1 |
| 16 | Ubiquinone and other terpenoid-quinone biosynthesis | Sme2.5\_00001.1\_g00048.1, Sme2.5\_00813.1\_g00013.1 |
| 17 | Valine, leucine and isoleucine biosynthesis | Sme2.5\_07653.1\_g00001.1, Sme2.5\_00162.1\_g00020.1 |
| 18 | Protein export | Sme2.5\_00377.1\_g00016.1, Sme2.5\_00232.1\_g00001.1 |
| 19 | Phenylalanine metabolism | Sme2.5\_00001.1\_g00048.1, Sme2.5\_00776.1\_g00002.1 |
| 20 | Linoleic acid metabolism | Sme2.5\_23355.1\_g00001.1 |
| 21 | Carbon fixation in photosynthetic organisms | Sme2.5\_03722.1\_g00005.1, Sme2.5\_02955.1\_g00005.1, Sme2.5\_04696.1\_g00001.1, Sme2.5\_00026.1\_g00001.1 |
| 22 | alpha-Linolenic acid metabolism | Sme2.5\_13015.1\_g00001.1, Sme2.5\_01731.1\_g00001.1 |
| 23 | Riboflavin metabolism | Sme2.5\_01701.1\_g00006.1 |
| 24 | Selenocompound metabolism | Sme2.5\_00097.1\_g00005.1 |
| 25 | Monoterpenoid biosynthesis | Sme2.5\_15018.1\_g00001.1 |
| 26 | Zeatin biosynthesis | Sme2.5\_02393.1\_g00005.1 |
| 27 | Biosynthesis of secondary metabolites (no map in kegg database) | Sme2.5\_00188.1\_g00020.1, Sme2.5\_01431.1\_g00003.1, Sme2.5\_25992.1\_g00001.1, Sme2.5\_30554.1\_g00001.1, Sme2.5\_12729.1\_g00004.1, Sme2.5\_02955.1\_g00005.1, Sme2.5\_00377.1\_g00016.1, Sme2.5\_01764.1\_g00007.1, Sme2.5\_14644.1\_g00002.1, Sme2.5\_00015.1\_g00020.1, Sme2.5\_00097.1\_g00005.1, Sme2.5\_00001.1\_g00048.1, Sme2.5\_07653.1\_g00001.1, Sme2.5\_02369.1\_g00001.1, Sme2.5\_01701.1\_g00006.1, Sme2.5\_13015.1\_g00001.1, Sme2.5\_00499.1\_g00004.1, Sme2.5\_04720.1\_g00004.1, Sme2.5\_00162.1\_g00020.1, Sme2.5\_00776.1\_g00002.1, Sme2.5\_02584.1\_g00008.1, Sme2.5\_00026.1\_g00001.1, Sme2.5\_11776.1\_g00001.1, Sme2.5\_15018.1\_g00001.1, Sme2.5\_05614.1\_g00005.1, Sme2.5\_00813.1\_g00013.1, Sme2.5\_01638.1\_g00005.1, Sme2.5\_12240.1\_g00001.1, Sme2.5\_01731.1\_g00001.1 |
| 28 | Ascorbate and aldarate metabolism | Sme2.5\_03911.1\_g00003.1, Sme2.5\_05293.1\_g00002.1 |
| 29 | Cutin, suberine and wax biosynthesis | Sme2.5\_05314.1\_g00003.1, Sme2.5\_15018.1\_g00001.1 |
| 30 | RNA polymerase | Sme2.5\_02187.1\_g00002.1 |
| 31 | Porphyrin and chlorophyll metabolism | Sme2.5\_01764.1\_g00007.1, Sme2.5\_04720.1\_g00004.1 |
| 32 | beta-Alanine metabolism | Sme2.5\_01431.1\_g00003.1, Sme2.5\_00499.1\_g00004.1 |
| 33 | Oxidative phosphorylation | Sme2.5\_00188.1\_g00008.1, Sme2.5\_00188.1\_g00007.1, Sme2.5\_05365.1\_g00004.1 |
| 34 | Phagosome | Sme2.5\_00864.1\_g00008.1, Sme2.5\_00125.1\_g00003.1 |
| 35 | Other glycan degradation (no map in kegg database) | Sme2.5\_02324.1\_g00010.1, Sme2.5\_01764.1\_g00007.1, Sme2.5\_04720.1\_g00004.1 |
| 36 | N-Glycan biosynthesis | Sme2.5\_00118.1\_g00007.1 |
| 37 | [Base excision repair](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map03410.html) | Sme2.5\_04309.1\_g00005.1 |
| 38 | [Amino sugar and nucleotide sugar metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00520.html) | Sme2.5\_00086.1\_g00011.1, Sme2.5\_00086.1\_g00012.1, Sme2.5\_10801.1\_g00001.1, Sme2.5\_07124.1\_g00003.1 |
| 39 | [Glycine, serine and threonine metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00260.html) | Sme2.5\_07653.1\_g00001.1, Sme2.5\_00162.1\_g00020.1 |
| 40 | [Pentose phosphate pathway](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00030.html) | Sme2.5\_02955.1\_g00005.1, Sme2.5\_01196.1\_g00005.1 |
| 41 | [Tyrosine metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00350.html) | Sme2.5\_25992.1\_g00001.1, Sme2.5\_11776.1\_g00001.1 |
| 42 | [Butanoate metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00650.html) | Sme2.5\_00499.1\_g00004.1 |
| 43 | [Galactose metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00052.html) | Sme2.5\_10801.1\_g00001.1, Sme2.5\_01674.1\_g00010.1 |
| 44 | [Pyruvate metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00620.html) | Sme2.5\_03722.1\_g00005.1, Sme2.5\_04696.1\_g00001.1, Sme2.5\_00377.1\_g00016.1 |
| 45 | [Propanoate metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00640.html) | Sme2.5\_01431.1\_g00003.1, Sme2.5\_00377.1\_g00016.1 |
| 46 | Degradation of aromatic compounds (no map in kegg database) | Sme2.5\_00001.1\_g00048.1 |
| 47 | [Pyrimidine metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00240.html) | Sme2.5\_02187.1\_g00002.1, Sme2.5\_07288.1\_g00002.1 |
| 48 | [Endocytosis](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map04144.html) | Sme2.5\_02324.1\_g00010.1, Sme2.5\_00701.1\_g00012.1, Sme2.5\_12877.1\_g00001.1, Sme2.5\_00377.1\_g00016.1 |
| 49 | [Arginine and proline metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00330.html) | Sme2.5\_01635.1\_g00012.1 |
| 50 | [Cysteine and methionine metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00270.html) | Sme2.5\_00065.1\_g00022.1, Sme2.5\_00097.1\_g00005.1 |
| 51 | [Fatty acid biosynthesis](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00061.html) | Sme2.5\_00377.1\_g00016.1 |
| 52 | [Glycerophospholipid metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00564.html) | Sme2.5\_01731.1\_g00001.1 |
| 53 | [Protein processing in endoplasmic reticulum](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map04141.html) | Sme2.5\_00377.1\_g00016.1, Sme2.5\_00125.1\_g00003.1, Sme2.5\_00118.1\_g00007.1, Sme2.5\_00232.1\_g00001.1 |
| 54 | Biosynthesis of amino acids (no map in kegg database) | Sme2.5\_01431.1\_g00003.1, Sme2.5\_02955.1\_g00005.1, Sme2.5\_00097.1\_g00005.1, Sme2.5\_07653.1\_g00001.1, Sme2.5\_00162.1\_g00020.1, Sme2.5\_00026.1\_g00001.1 |
| 55 | [Phenylalanine, tyrosine and tryptophan biosynthesis](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00400.html) | Sme2.5\_01431.1\_g00003.1 |
| 56 | [Plant hormone signal transduction](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map04075.html) | Sme2.5\_00225.1\_g00038.1, Sme2.5\_15018.1\_g00001.1 |
| 57 | [Alanine, aspartate and glutamate metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00250.html) | Sme2.5\_00499.1\_g00004.1 |
| 58 | [Plant-pathogen interaction](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map04626.html) | Sme2.5\_00076.1\_g00003.1, Sme2.5\_08282.1\_g00001.1, Sme2.5\_00225.1\_g00038.1 |
| 59 | [Photosynthesis](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00195.html) | Sme2.5\_01826.1\_g00003.1 |
| 60 | [Peroxisome](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map04146.html) | Sme2.5\_05314.1\_g00003.1, Sme2.5\_15018.1\_g00001.1 |
| 61 | [ABC transporters](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map02010.html) | Sme2.5\_00813.1\_g00013.1 |
| 62 | Fatty acid metabolism (no map in kegg database) | Sme2.5\_00377.1\_g00016.1 |
| 63 | [Fructose and mannose metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00051.html) | Sme2.5\_02955.1\_g00005.1 |
| 64 | [Glutathione metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00480.html) | Sme2.5\_00341.1\_g00020.1 |
| 65 | Carbon metabolism (no map in kegg database) | Sme2.5\_03722.1\_g00005.1, Sme2.5\_01431.1\_g00003.1, Sme2.5\_02955.1\_g00005.1, Sme2.5\_04696.1\_g00001.1, Sme2.5\_07653.1\_g00001.1, Sme2.5\_00162.1\_g00020.1, Sme2.5\_00026.1\_g00001.1 |
| 66 | [Spliceosome](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map03040.html) | Sme2.5\_01984.1\_g00017.1, Sme2.5\_00396.1\_g00018.1, Sme2.5\_05314.1\_g00003.1, Sme2.5\_08226.1\_g00002.1 |
| 67 | [Valine, leucine and isoleucine degradation](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00280.html) | Sme2.5\_01431.1\_g00003.1 |
| 68 | [Glycolysis / Gluconeogenesis](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00010.html) | Sme2.5\_02955.1\_g00005.1, Sme2.5\_00026.1\_g00001.1 |
| 69 | [Purine metabolism](file:///C:\Users\LAK\AppData\Local\Temp\Rar$EXa0.418\zd_13-VS-qc_13_fc1.5_map\map00230.html) | Sme2.5\_02187.1\_g00002.1 |