

Supplementary Table 1. Variables of the model for cold-light response pathway in tomato

| Gene ID          | Gene names                                        | Variables   | Definition                       |
|------------------|---------------------------------------------------|-------------|----------------------------------|
| Solyc12g005950.2 | <i>CONSTITUTIVE PHOTOMORPHOGENIC 1</i>            | [SICOP1]    | COP1 protein                     |
| Solyc08g061130.3 | <i>ELONGATED HYPOCOTYL 5</i>                      | [MSIHY5]    | <i>SIHY5</i> mRNA                |
|                  |                                                   | [SIHY5]     | HY5 protein                      |
| Solyc03g005570.3 | <i>MYB DOMAIN PROTEIN 15</i>                      | [MSIMYB15]  | <i>SIMYB15</i> mRNA              |
|                  |                                                   | [SIMYB15]   | Unphosphorylated SIMYB15 protein |
|                  |                                                   | [SIMYB15P]  | Phosphorylated SIMYB15 protein   |
| Solyc03g118310.4 | <i>INDUCER OF CBF EXPRESSION 1</i>                | [SIICE1]    | Unphosphorylated SIICE1 protein  |
|                  |                                                   | [SIICE1P]   | Phosphorylated SIICE1 protein    |
| Solyc01g105230.3 | <i>CALMODULIN-BINDING TRANSCRIPTION ACTIVATOR</i> | [MSICAMTA]  | <i>SICAMTA</i> mRNA              |
|                  |                                                   | [SICAMTA]   | Activated SICAMTA protein        |
| Solyc10g044670.2 | PHYTOCHROME A                                     | [PHYA]      | Phytochrome A                    |
| Solyc05g053410.3 | PHYTOCHROME B                                     | [PHYB]      | Phytochrome B                    |
| Solyc07g043580.3 | PHYTOCHROME INTERACTING FACTOR 4                  | [SIPIF4]    | SIPIF4 protein                   |
| Solyc11g011260.1 | GA-INSENSITIVE 4                                  | [SIGAI4]    | SIGAI4 protein                   |
| Solyc03g026270.2 | <i>C-REPEAT BINDING FACTOR 1</i>                  | [MSICBF1]   | <i>SICBF1</i> mRNA               |
|                  |                                                   | [SICBF1]    | Unphosphorylated SICBF1 protein  |
|                  |                                                   | [SICBF1P]   | Phosphorylated SICBF1 protein    |
| Solyc03g093870.1 | <i>ZINC FINGER PROTEIN 12</i>                     | [MSIZAT12]  | <i>SIZAT12</i> mRNA              |
|                  |                                                   | [SIZAT12]   | SIZAT12 protein                  |
| Solyc02g071210.3 | <i>COLD REGULATED 413</i>                         | [MSICOR413] | <i>SICOR413</i> mRNA             |
|                  |                                                   | [SICOR413]  | SICOR413 protein                 |