**Table S4. Protein sequences used in the phylogenetic relationship analysis.**

|  |  |  |
| --- | --- | --- |
| **Species** | **Gene name** | **Locus ID** |
| Arabidopsis | AtAUX1 | AT2G38120 |
|  | AtLAX1 | AT5G01240 |
|  | AtLAX2 | AT2G21050 |
|  | AtLAX3 | AT1G77690 |
|  | AtPIN1 | AT1G73590 |
|  | AtPIN2 | AT5G57090 |
|  | AtPIN3 | AT1G70940 |
|  | AtPIN4 | AT2G01420 |
|  | AtPIN5 | AT5G16530 |
|  | AtPIN6 | AT1G77110 |
|  | AtPIN7 | AT1G23080 |
|  | AtPIN8 | AT5G15100 |
|  | AtABCB1 | AT2G36910 |
|  | AtABCB2 | AT4G25960 |
|  | AtABCB3 | AT4G01820 |
|  | AtABCB4 | AT2G47000 |
|  | AtABCB5 | AT4G01830 |
|  | AtABCB6 | AT2G39480 |
|  | AtABCB7 | AT5G46540 |
|  | AtABCB9 | AT4G18050 |
|  | AtABCB10 | AT1G10680 |
|  | AtABCB11 | AT1G02520 |
|  | AtABCB12 | AT1G02530 |
|  | AtABCB13 | AT1G27940 |
|  | AtABCB14 | AT1G28010 |
|  | AtABCB15 | AT3G28345 |
|  | AtABCB16 | AT3G28360 |
|  | AtABCB17 | AT3G28380 |
|  | AtABCB18 | AT3G28390 |
|  | AtABCB19 | AT3G28860 |
|  | AtABCB20 | AT3G55320 |
|  | AtABCB21 | AT3G62150 |
|  | AtABCB22 | AT3G28415 |
| Solanum tuberosum | StLAX1 | PGSC0003DMT400004027 |
|  | StLAX2 | PGSC0003DMT400021923 |
|  | StLAX3 | PGSC0003DMT400059693 |
|  | StLAX4 | PGSC0003DMT400049377 |
|  | StLAX5 | PGSC0003DMT400016760 |
|  | StPIN1 | PGSC0003DMT400014752 |
|  | StPIN2 | PGSC0003DMT400048251 |
|  | StPIN3 | PGSC0003DMT400015267 |
|  | StPIN4 | PGSC0003DMT400078330 |
|  | StPIN5 | PGSC0003DMT400046253 |
|  | StPIN6 | PGSC0003DMT400079013 |
|  | StPIN7 | PGSC0003DMT400072459 |
|  | StPIN8 | PGSC0003DMT400003569 |
|  | StPIN9 | PGSC0003DMT400021600 |
|  | StPIN10 | PGSC0003DMT400027309 |
|  | StABCB1 | PGSC0003DMT400007960 |
|  | StABCB2 | PGSC0003DMT400003590 |
|  | StABCB3 | PGSC0003DMT400003546 |
|  | StABCB4 | PGSC0003DMT400034908 |
|  | StABCB5 | PGSC0003DMT400048379 |
|  | StABCB6 | PGSC0003DMT400063067 |
|  | StABCB7 | PGSC0003DMT400058977 |
|  | StABCB8 | PGSC0003DMT400018820 |
|  | StABCB9 | PGSC0003DMT400018812 |
|  | StABCB10 | PGSC0003DMT400027962 |
|  | StABCB11 | PGSC0003DMT400069516 |
|  | StABCB12 | PGSC0003DMT400013988 |
|  | StABCB13 | PGSC0003DMT400049576 |
|  | StABCB14 | PGSC0003DMT400045176 |
|  | StABCB15 | PGSC0003DMT400022893 |
|  | StABCB16 | PGSC0003DMT400009924 |
|  | StABCB17 | PGSC0003DMT400019156 |
|  | StABCB18 | PGSC0003DMT400019085 |
|  | StABCB19 | PGSC0003DMT400074962 |
|  | StABCB20 | PGSC0003DMT400030345 |
|  | StABCB21 | PGSC0003DMT400030342 |
|  | StABCB22 | PGSC0003DMT400011930 |
| Rice | OsLAX1 | LOC\_Os01g63770 |
|  | OsLAX2 | LOC\_Os03g14080 |
|  | OsLAX3 | LOC\_Os05g37470 |
|  | OsLAX4 | LOC\_Os10g05690 |
|  | OsLAX5 | LOC\_Os11g06820 |
|  | OsPIN1a | LOC\_Os06g12610 |
|  | OsPIN1b | LOC\_Os02g50960 |
|  | OsPIN1c | LOC\_Os11g04190 |
|  | OsPIN1d | LOC\_Os12g04000 |
|  | OsPIN2 | LOC\_Os06g44970 |
|  | OsPIN5a | LOC\_Os01g69070 |
|  | OsPIN5b | LOC\_Os08g41720 |
|  | OsPIN5c | LOC\_Os09g32770 |
|  | OsPIN8 | LOC\_Os01g51780 |
|  | OsPIN9 | LOC\_Os01g58860 |
|  | OsPIN10a | LOC\_Os01g45550 |
|  | OsPIN10b | LOC\_Os05g50140 |
|  | OsABCB1 | LOC\_Os01g18670 |
|  | OsABCB2 | LOC\_Os01g34970 |
|  | OsABCB3 | LOC\_Os01g35030 |
|  | OsABCB4 | LOC\_Os01g50080 |
|  | OsABCB5 | LOC\_Os01g50100 |
|  | OsABCB6 | LOC\_Os01g50160 |
|  | OsABCB7 | LOC\_Os01g52550 |
|  | OsABCB8 | LOC\_Os01g74470 |
|  | OsABCB9 | LOC\_Os02g09720 |
|  | OsABCB10 | LOC\_Os02g21750 |
|  | OsABCB11 | LOC\_Os02g46680 |
|  | OsABCB12 | LOC\_Os03g08380 |
|  | OsABCB13 | LOC\_Os03g17180 |
|  | OsABCB14 | LOC\_Os04g38570 |
|  | OsABCB15 | LOC\_Os04g40570 |
|  | OsABCB16 | LOC\_Os04g54930 |
|  | OsABCB18 | LOC\_Os05g47490 |
|  | OsABCB19 | LOC\_Os05g47500 |
|  | OsABCB20 | LOC\_Os08g05690 |
|  | OsABCB21 | LOC\_Os08g05710 |
|  | OsABCB22 | LOC\_Os08g45030 |
| Solanum lycopersicum | SlLAX1 | HQ671063 |
|  | SlLAX2 | HQ671064 |
|  | SlLAX3 | HQ671065 |
|  | SlLAX4 | HQ671066 |
|  | SlLAX5 | HQ671067 |
|  | SlPIN1 | HQ127074 |
|  | SlPIN2 | HQ127077 |
|  | SlPIN3 | HQ127079 |
|  | SlPIN4 | HQ127078 |
|  | SlPIN5 | HQ127080 |
|  | SlPIN6 | HQ127082 |
|  | SlPIN7 | HQ127076 |
|  | SlPIN8 | HQ127083 |
|  | SlPIN9 | HQ127075 |
|  | SlPIN10 | HQ127081 |
|  | SlABCB1 | Solyc02g071340.1 |
|  | SlABCB2 | Solyc02g071350.2 |
|  | SlABCB3 | Solyc02g087410.2 |
|  | SlABCB4 | Solyc02g087870.2 |
|  | SlABCB5 | Solyc03g005860.2 |
|  | SlABCB6 | Solyc03g093650.2 |
|  | SlABCB7 | Solyc04g010310.2 |
|  | SlABCB8 | Solyc06g009280.1 |
|  | SlABCB9 | Solyc06g009290.2 |
|  | SlABCB10 | Solyc06g072960.1 |
|  | SlABCB11 | Solyc07g018130.1 |
|  | SlABCB12 | Solyc07g064120.1 |
|  | SlABCB13 | Solyc08g076720.2 |
|  | SlABCB14 | Solyc09g008240.2 |
|  | SlABCB15 | Solyc11g067310.1 |
|  | SlABCB16 | Solyc12g098840.1 |
|  | SlABCB17 | Solyc12g098870.1 |
|  | SlABCB18 | Solyc11g067300.1 |
|  | SlABCB19 | Solyc05g013890.1 |
|  | SlABCB20 | Solyc03g026310.2 |
|  | SlABCB21 | Solyc03g114950.2 |
|  | SlABCB22 | Solyc03g122050.1 |
|  | SlABCB23 | Solyc03g122070.1 |
|  | SlABCB24 | Solyc09g009910.2 |
|  | SlABCB25 | Solyc09g055350.2 |
|  | SlABCB26 | Solyc00g304030.1 |
|  | SlABCB27 | Solyc12g049120.1 |
|  | SlABCB28 | Solyc12g049130.1 |
|  | SlABCB29 | Solyc12g070280.1 |