**S1 Table Detailed information for the 21 genes used in this study**

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| **Gene Name** | **Locus ID** | **Function or putative function** |
| *OsGS1;1* | LOC\_Os02g50240 | Cytosolic glutamine synthetase 1;1 |
| *OsGS1;2* | LOC\_Os03g12290 | Cytosolic glutamine synthetase 1;2 |
| *OsGS2* | LOC\_Os04g56400 | Chloroplastic glutamine synthetase  |
| *OsFd-GOGAT* | LOC\_Os07g46460 | Ferredoxin dependent-glutamate synthase Fd-Gogat |
| *OsGDH1* | LOC\_Os03g58040 | Glutamate dehydrogenase1 |
| *OsGDH2* | LOC\_Os04g45970 | Glutamate dehydrogenase2 |
| *OsPSBA* | LOC\_Os04g16770 | Photosystem II P680 reaction center D1 protein |
| *OsPSAB* | LOC\_Os12g37040 | Photosystem I P700 chlorophyll a apoprotein A2 |
| *OsATPD1* | LOC\_Os03g55874 | F-type H+-transporting ATPase subunit beta  |
| *OsATPD2* | LOC\_Os12g10570 | F-type H+-transporting ATPase subunit beta |
| *OsHEMA* | LOC\_Os10g35840 | Glutamyl-tRNA reductase  |
| *OsHEML* | LOC\_Os08g41990 | Glutamate-1-semialdehyde 2,1-aminomutase  |
| *OsHEME1* | LOC\_Os01g43390 | Uroporphyrinogen decarboxylase |
| *OsCHLI* | LOC\_Os03g36540 | Magnesium chelatase subunit I  |
| *OsHEMY* | LOC\_Os01g18320 | Oxygen-dependent protoporphyrinogen oxidase |
| *OsPORA* | LOC\_Os04g58200 | Protochlorophyllide reductase  |
| *OsPORB* | LOC\_Os10g35370 | Protochlorophyllide reductase  |
| *OsPAO* | LOC\_Os03g05310 | Pheophorbide a oxygenase  |
| *OsCRD1* | LOC\_Os01g17170 | Magnesium-protoporphyrin IX monomethyl ester cyclase  |
| *OsCHLG* | LOC\_Os05g28200 | Chlorophyll synthase  |
| *OsCHLP* | LOC\_Os02g51080 | Geranylgeranyl reductase  |