**SUPPLEMENTARY FILE 1**

**The Induction of a Pyrenoid by Hyperoxia: Implications for the Natural Diversity of Photosynthetic Responses in *Chlamydomonas***

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**Supplementary File 1A**: 2NBH Growth Media

|  |  |  |
| --- | --- | --- |
| Volume of Stock Solution (ml/l) | Stock Solution | Stock Solution Content (grams) |
| 2 | NaNO3 | 100 g/400 ml |
| 1 | CaCl2 | 10 g/ 400 ml |
| 1 | MgSO4 7H2O | 30 g / 400 ml |
| 1 | TAP Phosphate Solution | 28.8 g K2HPO4 + 14.4g KH2PO4 /100ml |
| 1 | NaCl | 10 g/ 400 ml |
| 1 | Hutner Solution |  |

**Supplementary File 1B**: Rubisco activity rates (in picomole C fixed by rubisco s-1 per ug of Chl), showing effects of hyperoxia on activity of rubisco in CC-1009 and CC-2343. Raw extracts of the cells prior to (zero hours) and after exposure to hyperoxia (31 hours, see Materials and Methods) were assayed rapidly (hatched bars), reflecting the native activation state, or after pre-incubation for 10 minutes in the presence of MgCl2, H12CO3-, and 6-phosphogluconate, which promotes reactivation of inhibited enzyme (solid bars) (See Figure 1 for graph). STD is the standard deviation of the three biological replicates, each with three technical replicates.



**Supplementary File 1C**: Rates of oxygen evolution in CC-2343 and CC-1009 (μM O2 min-1) and maximum oxygen compensation point in control and cells pre-treated for 6 hours with hydrogen peroxide (see Figure 14 for graphs).

