

Description of Additional Supplementary Files

Supplementary Data 1

Description: Proteins identified by whole-cell proteomics whose abundance changes over a 6-hour time course of recalcification in noncalcifying and recalcifying cells.

Supplementary Data 2

Description: Candidate COccolith PROteins (COPROs)

Supplementary Data 3

Description: Candidate coccolith vesicle proteins identified by proteomic analysis of proto-coccolith samples.

Supplementary Data 4

Description: Candidate coccosphere proteins.

Supplementary Data 5 Description: Proteins identified by whole-cell proteomics that vary in abundance between C-cells and non-calcifying N-cells (CvsN dataset) and between day and night phases in C cells (Light vs. Dark dataset).

Supplementary Data 6

Description: Pfam domains that were over-represented in each orthogroups-age class compared to the entirety of the *E. huxleyi* proteome.