SUPPLEMENTARY FIGURE S1 OF "DIRECT EVIDENCE OF SEX IN SYMBIODINIACEAE AND A HYPOTHESIS ABOUT MEIOSIS" BY R.I. FIGUEROA, L. HOWE-KERR AND A.M.S. CORREA.

S1. Updated proposed life cycle hypothesis for Symbiodiniaceae, based on the findings of this study. Vegetative cells are characterized by the presence of three unique elements: nucleus (N), pyrenoid (PY) and accumulation body (AB). Mitotic cells replicate their DNA, forming a larger (2C) nucleus. Nuclear division (karyokinesis) occurs first, followed by cytoplasmic division (cytokinesis). Pyrenoids are observed to duplicate in advanced cytokinesis stages, when the outer cellular morphology is already indicative of two cells. Zygotes (2N, diploid) have a larger nucleus than vegetative cells due to the nuclear fusion of gametes. Two pyrenoids and accumulation bodies are present after fusion as a result of the cytoplasmic contribution of each gamete. DNA replicates once, giving rise to a 4C DNA content cell, which then divides into two cells (dyad) during Meiosis I. Asynchronous division during Meiosis II leads to the formation of triads and eventually to a 4-cell stage (tetrad) of haploid, 1C DNA content cells.