



Figure S1. A) A representative confocal micrograph (1 of 40) showing cells maintained as a stable, photosynthetically supported binary culture of *T. elongatus* (red; autofluorescence) supporting *M. ruber* (green; SYBR Gold). Scale bar represents 10 μm . B) Relative abundances measured in % cells counted via fluorescence activated cell sorting. Values represent the mean from three independent steady states held under different oxygen tensions ($\text{pO}_2 = 0, 0.3$ and 0.6 ATM-O_2). Error bars represent ± 1 standard deviation.