

SI Guide

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Guide to the Supplementary Information files - Fourquez et al.

Figures and tables are numbered continuously across the three Supplementary Information files, in the order Laboratory (Fig. S1–S3, Table S1), Field (Fig. S4–S6, Table S2–S5) and Model (Fig. S7–S16, Table S6–S8).

Supplementary Information — Laboratory

Contents: Supplementary Methods and Supplementary Discussion; three figures (Fig. S1–S3) and one table (Table S1).

Description: One PDF containing Supplementary Methods, a theoretical Discussion, three figures and one table. The display items collectively show measured versus reconstructed gas concentration, a stoichiometric model of carbon-flux partitioning between the complete citric acid cycle and the glyoxylate shunt, and predicted O₂/CO₂ yields and respiratory quotient as a function of carbon redirected towards the glyoxylate shunt.

Supplementary Information — Field

Contents: Supplementary Methods; three figures (Fig. S4–S6) and four tables (Table S2–S5).

Description: One PDF containing Supplementary Methods, four figures and four tables. The display items collectively show the incubation experimental design, flow-cytometric cell abundances, ¹³C enrichment of the dissolved inorganic carbon pool, apparent respiratory quotients, and single-cell ¹³C-glucose assimilation by marine bacteria measured by NanoSIMS.

Supplementary Information — Model

Contents: Supplementary Methods (model equations, configuration, sensitivity analysis, optimization); ten figures (Fig. S7–S16) and three tables (Table S6–S8).

Description: One PDF containing Supplementary Methods with model equations, ten figures and three tables. The display items collectively show the WOMBAT-full metabolic formulation, observational targets and Argo pre-processing, sensitivity analysis, Gaussian-process surrogate skill, parameter optimization, and calibrated model output including a Taylor diagram of performance while varying partial oxidation.