Description of Additional Supplementary Files

File Name: Supplementary Data 1
Description: Alteromonas macleodii ATCC 27126, CAZy and other biofilm related genes

File Name: Supplementary Movie 1
Description: ***A. macleodii* slows the sinking of marine snow particles.** An example of two sinking experiments in the presence or absence of *A. macleodii*. Images were acquired every 5 min for 25 h. Accumulation of thick biofilm is observed at the periphery of the particle when the particle was descending through seawater containing *A. macleodii*.

File Name: Supplementary Movie 2
Description: **Particles sink in a bulk sedimentation chamber.** Particles made from the algae *P. tricornutum are* incubated with or without *A. macleodii* for 48 h and tested in a sedimentation chamber to compare their terminal sinking speed (see Fig. 1, F and G, and fig. S6). Presented is 3 second video sample from the experiment

File Name: Supplementary Movie 3
Description: **Biofilm of bacteria other than *A. macleodii* can also slow the sinking of particles, but not all biofilm can resist the shear forces around a sinking particle.** Three bacterial strains were tested for their ability to form biofilm around an obstacle (marine snow particle or a 50 µm pillar) in a microfluidic chamber while followed by video microscopy. Among the three, *A. macleodii* and *Pseudomonas zhaodongensis* Pz15 but not *Bacillus* sp. F2 were able to accumulate and form thick biofilm around the obstacle (flow speed within the video). Note that *Bacillus* sp. F2 was unable to accumulate and sustain a stable biofilm on the pillar under flow despite being able to produce thick biofilm in MB2216 media.

File Name: Supplementary Movie 4
Description: **Biofilm of *A. macleodii* accumulates on copepod fecal pellets.** Accumulation of biofilm on copepod fecal pellet within a microfluidic device at a flow rate of 14.5 m/day.

File Name: Supplementary Movie 5
Description: ***A. macleodii* biofilm can serve as an attachment site for other bacterial strains.** Particles were monitored in a microfluidic channel under flow in the presence of *A. macleodii* and GFP-tagged Marinobacter adhaerens HP15 bacteria. The video illustrates the superposition of three colors; In red – chlorophyll (algal particle), in green – GFP signal from *M. adhaerens*, and in gray – phase image. Flow rate was 11.5 m/day

File Name: Supplementary Movie 6
Description: **Accumulation of biofilm rather than biofilm growth controls the sinking speed of particles in our experimental system.** The images show a particle pre-colonized by *A. macleodii* sinking in sterile seawater. Images were acquired every 10 min for 43 h. The movie shows only little growth of biofilm on particles, which resulted in a 12% reduction in sinking speed over the period of 43 h. Note that a 45% reduction in sinking speed was observed over a period of 24 h in the case when *A. macleodii* biofilm was present in the ASW reservoir.