Supplemental Materials

Table S1. Properties of Pluronics used in studies with *Pc*O6.

Pluronic	MW	% PEO by mass	Surface Tension	Effect on phenazine production by *Pc*O6
P123	5750	30	34	Decrease
P104	5900	40	33	Decrease
F68	8,400	80	45	No change
F108	14,600	80	41	No change
25R2	3,100	20	43	Increase

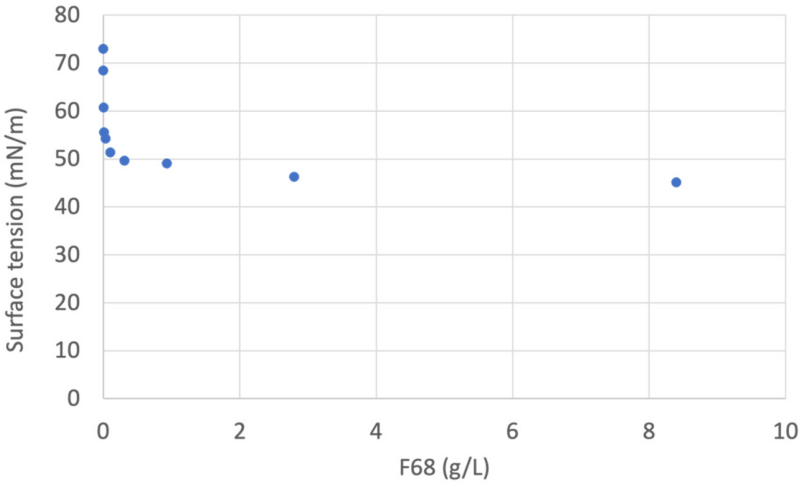
Surface tension data for P123, P104, F108. and 25R2 are from Housley et al (2009) and were measured with 0.1% solutions (v/v) at 25 °C, whereas for F68 the temperature was 23 °C (data from Supplemental Figure S1).

Table S2. Cell types to which Pluronic - F68 can serve as a cryoprotective agent under various research conditions.

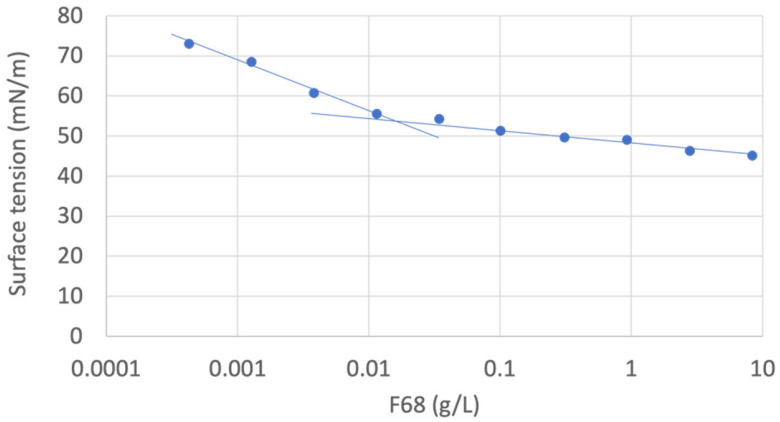
Cell Types
Human erythrocytes (Glauser & Talbot, 1956)
Chinese hamster cells (Puck strain A) (Ashwood-Smith et al., 1973)
Photosynthetic picoeukaryotes (Liu et al., 2022)
Human tooth germ stem cells (Doğan et al., 2013)
*Oryza sativa*cvs (Anthony et al., 1996)
Lolium multiflorum (Anthony et al., 1996)
Mouse BALB/c myeloma cells (González Hernández & Fischer, 2007)
Monkey African green kidney cells (González Hernández & Fischer, 2007)

Surfactant activity was measured at 23 °C using a wire probe tensiometer (Kibron Instruments) with defined dilutions of F68 made in double distilled water. Water surface tension vs. F68 concentrations are shown on linear (graph, A) and log (graph, B) scales to help identify transitions in surface tension. These findings show that the surface tension values decline sharply at low concentrations then exhibit a transition near 0.01 g/L F68 with a continued but lesser decrease in surface tension as F68 concentrations are increased; this absence of a true

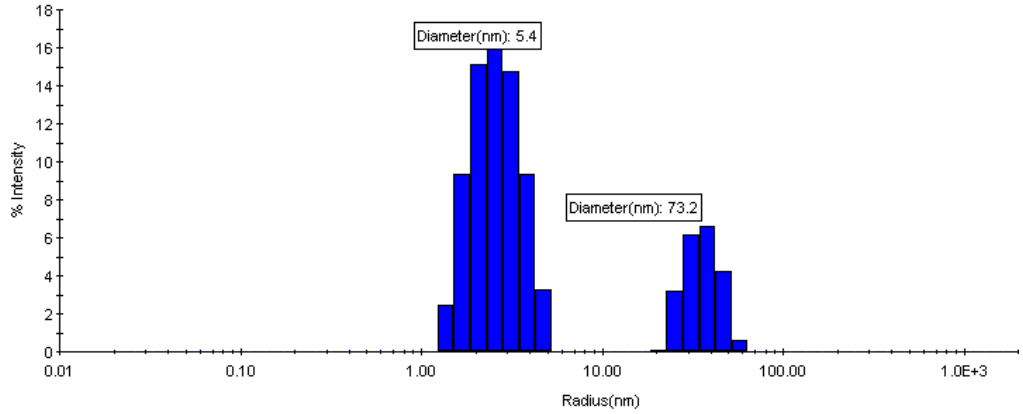
plateau is characteristic of F68 at room temperature and leads to a large discrepancy in the range of critical micelle concentrations (CMCs) reported for F68 in the literature.



(A)



(B)



(C)

Figure S1: Surfactant activity of F68 shown as a linear response (A) and a log scale (B); (C) Particle sizes detected in 0.1% F68 solution.

The coexistence of F68 micelles and F68 unimers were determined using a DynaPro Nanostar dynamic light scattering (DLS) instrument (Wyatt Instruments). In Supplemental Figure 2 the elastic light scattering data show particles of 5.4 nm mean diameter that correlate to F68 monomers (often referred to as "unimers") and particles with a mean diameter near 73 nm corresponding to F68 micelles and larger aggregates. The high PEO content (80%) combined with a low PPO content results in F68 not exhibiting well-defined micelle transitions and micelle sizes as compared to other Pluronics having more PPO content and a greater driving force for assembly into micelles in water.

The images in Supplemental Figure S2 A,B are negative controls to rule out intrinsic or F68-induced intrinsic fluorescence in the studies for binding of fF68 to *Pc*O6 cells. The studies were performed using the same cells as those exposed to fF68. The cells in Supplemental Figure S2 A were without exposure to F68. In Figure S2 A the left-hand image is brightfield to show the density of the *Pc*O6 cells, which lack any native fluorescence when viewed using the FITC filter at 1s integration time, as shown in the right-hand image. Supplemental Figure S2B the left-hand image is the brightfield exposure for cells exposed to unlabeled F68 for 3 h; the right-hand image in B shows no fluorescence, indicating that F68 treatment did not induce the formation of metabolites in the *Pc*O6 cells having measurable fluorescence under FITC illumination. These control studies confirm the fF68 association with the *Pc*O6 cells caused the exposed cells to become fluorescent when examined with the FITC filter set. Pseudomonads produce a range of metabolites that exhibit fluorescence; however, none were detected under these conditions.

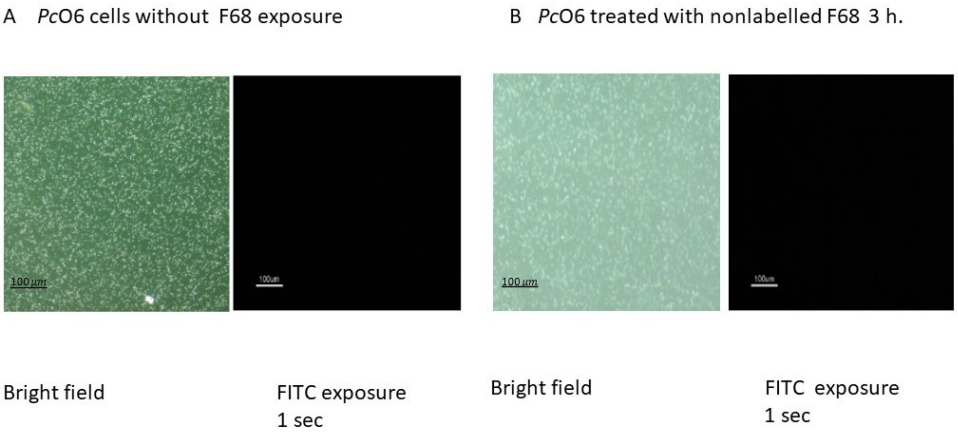


Figure S2 A,B: Control studies for the responses of *Pc*O6 cells to treatment with fF68.