Supplemental Figure 1: Increased buffering capacity of algal cell cultures during batch growth.

To assess the buffering capacity of media, algae cultures at different stages of increasing growth were titrated with HCl. Photoautotrophic *Chlorella vulgaris* cultures were grown on 0.3 gN/L in shake flasks with 5% (v/v) CO₂ (v/v) in air. The cultures were grown on KNO₃ 0-9% N-NH₄⁺ provided as NH₄OH. The cultures were degassed to ensure samples were in equilibrium with air prior to performing the titrations and the effects of the bicarbonate buffering system would be negligible. HCl (0.014N) was added to these total culture samples with the volume of addition measured using a burette. Fresh media (0.3 gN/L with NH₄NO₃ and KNO₃ at 36%N-NH₄⁺) was included as a comparison to the buffering capacity when cells were present at varying densities. This study reflects the overall buffering capacity of the culture and does not distinguish between the contributions of increasing cell density and media exhaustion.