



**Supplemental figure 1. Fluorescence intensity in sputum samples.** (A-C) Visualization of representative sputum samples from two CF patients and one CAP patient analysed with quantitative PNA-FISH based on fluorescence emitted from a universal bacteria specific PNA-FISH probe (16S rRNA). (A) CF sputum sample with non-growing or slow-growing cells based on the reduced numbers of intracellular ribosomal content (~3500 FU). (B) CF sputum sample with medium growing cells based on the numbers of intracellular ribosomal content (~8000 FU). (C) CAP sputum sample with fast growing cells based on the increased numbers of ribosomal content (~20500 FU). (D) Fluorescence intensity (FU) measured in each biofilm detected in images from sputum samples from CAP (n= 15), CF (n= 12) and COPD (n= 10). (E) Fluorescence intensity (FU) measured in all planktonic cells detected in images from sputum samples from CAP (n= 14), CF (n= 13) and COPD (n= 11). (F) Percent of total biomass in biofilms (red) and planktonic cells (black). (G) Proportion of biomass in biofilms (red) and planktonic cells (black). Statistical significance was determined using Kruskal-Wallis test ( $P \leq 0.05$ ).