

**Table S4: Effects of spaceflight and motility on biofilm formation and architecture in high phosphate media.**

**In mAUM-high Pi**

<i>P. aeruginosa</i>	Gravity	Viable cells (10 <sup>6</sup> CFU/mem)	Biomass (μm <sup>3</sup> /μm <sup>2</sup> )	Mean thickness (μm)	Void fraction	Structure
Wild type	Normal gravity	1.0±0.7	3.2±0.1	4.3±0.5	0.24±0.08	Flat
	Spaceflight	5.5±1.5	4.4±0.2	7.5±0.6	0.40±0.05	Column & canopy
<i>ΔmotABCD</i>	Normal gravity	1.2±0.6	4.2±0.3	6.4±0.3	0.34±0.05	Flat
	Spaceflight	1.6±0.8	4.1±0.1	6.3±0.3	0.34±0.02	Flat

**In mAUMg-high Pi**

<i>P. aeruginosa</i>	Gravity	Viable cells (10 <sup>6</sup> CFU/mem)	Biomass (μm <sup>3</sup> /μm <sup>2</sup> )	Mean thickness (μm)	Void fraction	Structure
Wild type	Normal gravity	0.7±0.4	3.4±0.3	4.7±1.0	0.23±0.03	Flat
	Spaceflight	8.6±2.8	5.1±0.3	8.3±1.3	0.42±0.05	Column & canopy
<i>ΔmotABCD</i>	Normal gravity	1.3±0.1	3.7±0.5	4.8±0.5	0.22±0.04	Flat
	Spaceflight	3.7±1.2	4.0±0.6	5.5±1.4	0.28±0.09	Flat
<i>ΔpilB</i>	Normal gravity	0.9±0.3	3.9±0.1	6.4±0.5	0.33±0.02	Flat
	Spaceflight	7.5±1.6	4.7±0.4	8.5±0.2	0.44±0.09	Column & canopy

All strains were grown in FPAs with solid inserts. Biomass and mean thickness were calculated from CSLM images using COMSTAT software. Void fraction was calculated as described (Equation S1). Results are shown as mean ± SD; N=3.