

S1. SUPPLEMENTARY MATERIALS

Effect of Cyclodextrins on the Biofilm Formation Capacity of *Pseudomonas aeruginosa* PAO1

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RESULTS OF OPTICAL DENSITY MEASUREMENT

S1. SUPPLEMENTARY MATERIALS - RESULTS OF OPTICAL DENSITY MEASUREMENT

Table S1. Effect of the native α -cyclodextrin on the population growth of *P. aeruginosa*, determined through the measurement of the optical density

T	Tested sample		Optical density [-]			
			6 h	24 h	48 h	72 h
22°C	ACD [mM]	Control	0.01 ± 0.00	0.22 ± 0.01	0.53 ± 0.01	0.65 ± 0.04
		0.1	0.01 ± 0.00	0.26 ± 0.00	0.65 ± 0.02	0.71 ± 0.01
		0.5	0.01 ± 0.00	0.28 ± 0.00	0.64 ± 0.02	0.95 ± 0.01
		2.5	0.01 ± 0.00	0.26 ± 0.01	0.75 ± 0.01	0.91 ± 0.02
		12.5	0.01 ± 0.00	0.24 ± 0.01	0.68 ± 0.01	0.58 ± 0.02
30°C	ACD [mM]	Control	0.03 ± 0.00	0.68 ± 0.02	0.61 ± 0.02	0.62 ± 0.02
		0.1	0.04 ± 0.00	0.69 ± 0.01	0.69 ± 0.03	0.74 ± 0.02
		0.5	0.04 ± 0.00	0.78 ± 0.03	0.75 ± 0.05	0.79 ± 0.03
		2.5	0.04 ± 0.01	0.93 ± 0.02	0.95 ± 0.03	0.87 ± 0.02
		12.5	0.04 ± 0.00	0.73 ± 0.04	0.79 ± 0.04	0.62 ± 0.01

Table S2. Effect of the native α -cyclodextrin on the optical density of the planktonic supernatant of *P. aeruginosa*

T	Tested sample		Optical density of the planktonic supernatant [-]			
			6 h	24 h	48 h	72 h
22°C	ACD [mM]	Control	0.01 ± 0.00	0.07 ± 0.00	0.36 ± 0.01	0.60 ± 0.02
		0.1	0.00 ± 0.00	0.08 ± 0.00	0.31 ± 0.02	0.56 ± 0.02
		0.5	0.00 ± 0.00	0.09 ± 0.00	0.25 ± 0.00	0.72 ± 0.01
		2.5	0.01 ± 0.00	0.10 ± 0.00	0.34 ± 0.01	0.69 ± 0.03
		12.5	0.01 ± 0.00	0.10 ± 0.00	0.39 ± 0.01	0.59 ± 0.01
30°C	ACD [mM]	Control	0.02 ± 0.00	0.39 ± 0.02	0.47 ± 0.03	0.44 ± 0.02
		0.1	0.03 ± 0.00	0.44 ± 0.02	0.59 ± 0.02	0.52 ± 0.02
		0.5	0.03 ± 0.00	0.50 ± 0.02	0.61 ± 0.03	0.56 ± 0.03
		2.5	0.03 ± 0.00	0.61 ± 0.02	0.94 ± 0.01	0.78 ± 0.07
		12.5	0.03 ± 0.00	0.51 ± 0.01	0.78 ± 0.03	0.55 ± 0.04

Table S3. Effect of the randomly methylated α -cyclodextrin on the population growth of *P. aeruginosa*, determined through the measurement of the optical density

T	Tested sample		Optical density [-]			
			6 h	24 h	48 h	72 h
22°C	RAMEA [mM]	Control	0.01 ± 0.00	0.22 ± 0.01	0.53 ± 0.01	0.65 ± 0.04
		0.1	0.01 ± 0.00	0.25 ± 0.01	0.65 ± 0.01	0.74 ± 0.01
		0.5	0.01 ± 0.00	0.20 ± 0.00	0.64 ± 0.01	0.90 ± 0.01
		2.5	0.01 ± 0.00	0.26 ± 0.01	0.68 ± 0.02	0.92 ± 0.01
		12.5	0.01 ± 0.00	0.24 ± 0.00	0.63 ± 0.01	0.79 ± 0.01
30°C	RAMEA [mM]	Control	0.03 ± 0.00	0.68 ± 0.02	0.61 ± 0.02	0.62 ± 0.02
		0.1	0.04 ± 0.01	0.63 ± 0.03	0.73 ± 0.02	0.76 ± 0.03
		0.5	0.04 ± 0.01	0.83 ± 0.01	0.86 ± 0.04	0.64 ± 0.02
		2.5	0.04 ± 0.00	0.81 ± 0.07	0.90 ± 0.04	0.85 ± 0.08
		12.5	0.05 ± 0.00	0.60 ± 0.02	0.78 ± 0.02	0.72 ± 0.03

Table S4. Effect of the randomly methylated α -cyclodextrin on the optical density of the planktonic supernatant of *P. aeruginosa*

T	Tested sample		Optical density of the planktonic supernatant [-]			
			6 h	24 h	48 h	72 h
22°C	RAMEA [mM]	Control	0.01 ± 0.00	0.07 ± 0.00	0.36 ± 0.01	0.60 ± 0.02
		0.1	0.01 ± 0.00	0.07 ± 0.00	0.30 ± 0.02	0.63 ± 0.01
		0.5	0.01 ± 0.00	0.07 ± 0.00	0.24 ± 0.01	0.66 ± 0.02
		2.5	0.01 ± 0.00	0.09 ± 0.01	0.35 ± 0.01	0.73 ± 0.01
		12.5	0.01 ± 0.00	0.10 ± 0.00	0.38 ± 0.01	0.68 ± 0.02
30°C	RAMEA [mM]	Control	0.02 ± 0.00	0.39 ± 0.02	0.47 ± 0.03	0.44 ± 0.02
		0.1	0.03 ± 0.00	0.42 ± 0.00	0.58 ± 0.02	0.53 ± 0.50
		0.5	0.03 ± 0.00	0.51 ± 0.03	0.84 ± 0.05	0.50 ± 0.02
		2.5	0.03 ± 0.00	0.51 ± 0.02	0.91 ± 0.03	0.83 ± 0.03
		12.5	0.03 ± 0.00	0.40 ± 0.03	0.73 ± 0.02	0.73 ± 0.06

Table S5. Effect of the trimethyl-aminopropyl α -cyclodextrin on the population growth of *P. aeruginosa*, determined through the measurement of the optical density

T	Tested sample		Optical density [-]			
			6 h	24 h	48 h	72 h
22°C	QAACD [mM]	Control	0.08 ± 0.00	0.47 ± 0.02	0.85 ± 0.02	0.85 ± 0.02
		0.1	0.08 ± 0.00	0.48 ± 0.02	0.87 ± 0.02	0.88 ± 0.02
		0.5	0.08 ± 0.00	0.47 ± 0.02	0.93 ± 0.02	0.98 ± 0.02
		2.5	0.07 ± 0.00	0.46 ± 0.01	1.06 ± 0.04	1.15 ± 0.03
		12.5	0.07 ± 0.00	0.52 ± 0.02	1.15 ± 0.04	1.24 ± 0.04
30°C	QAACD [mM]	Control	0.31 ± 0.01	0.71 ± 0.02	0.62 ± 0.05	0.67 ± 0.03
		0.1	0.31 ± 0.01	0.72 ± 0.01	0.65 ± 0.02	0.66 ± 0.02
		0.5	0.31 ± 0.00	0.83 ± 0.02	0.72 ± 0.02	0.65 ± 0.01
		2.5	0.31 ± 0.00	1.05 ± 0.02	0.99 ± 0.04	0.75 ± 0.02
		12.5	0.32 ± 0.05	0.98 ± 0.01	1.17 ± 0.03	1.07 ± 0.04

Table S6. Effect of the trimethyl-aminopropyl α -cyclodextrin on the optical density of the planktonic supernatant of *P. aeruginosa*

T	Tested sample		Optical density of the planktonic supernatant [-]			
			6 h	24 h	48 h	72 h
22°C	QAACD [mM]	Control	0.05 ± 0.00	0.15 ± 0.01	0.41 ± 0.02	0.45 ± 0.04
		0.1	0.05 ± 0.00	0.18 ± 0.02	0.43 ± 0.02	0.47 ± 0.03
		0.5	0.05 ± 0.00	0.15 ± 0.02	0.48 ± 0.02	0.49 ± 0.03
		2.5	0.05 ± 0.00	0.14 ± 0.02	0.54 ± 0.05	0.68 ± 0.03
		12.5	0.05 ± 0.00	0.26 ± 0.02	0.84 ± 0.03	0.55 ± 0.04
30°C	QAACD [mM]	Control	0.14 ± 0.01	0.53 ± 0.03	0.40 ± 0.05	0.39 ± 0.04
		0.1	0.14 ± 0.01	0.53 ± 0.03	0.36 ± 0.04	0.42 ± 0.03
		0.5	0.13 ± 0.01	0.57 ± 0.05	0.39 ± 0.05	0.35 ± 0.02
		2.5	0.16 ± 0.01	0.70 ± 0.03	0.82 ± 0.04	0.51 ± 0.09
		12.5	0.17 ± 0.0	0.74 ± 0.04	0.93 ± 0.04	0.92 ± 0.06

Table S7. Effect of the α -cyclodextrin polymer on the optical density of the planktonic supernatant of *P. aeruginosa*

T	Tested sample		Optical density [-]			
			6 h	24 h	48 h	72 h
22°C	ACDPS [mM]	Control	0.08 ± 0.00	0.47 ± 0.02	0.85 ± 0.02	0.85 ± 0.02
		0.1	0.08 ± 0.01	0.43 ± 0.01	0.82 ± 0.03	0.84 ± 0.03
		0.5	0.07 ± 0.01	0.44 ± 0.02	0.84 ± 0.03	0.93 ± 0.02
		2.5	0.07 ± 0.00	0.42 ± 0.02	0.76 ± 0.03	0.88 ± 0.02
		12.5	0.09 ± 0.01	0.49 ± 0.02	0.77 ± 0.02	0.88 ± 0.03
30°C	ACDPS [mM]	Control	0.31 ± 0.01	0.71 ± 0.02	0.62 ± 0.05	0.67 ± 0.03
		0.1	0.31 ± 0.01	0.73 ± 0.02	0.67 ± 0.01	0.62 ± 0.02
		0.5	0.30 ± 0.01	0.77 ± 0.03	0.94 ± 0.02	0.68 ± 0.01
		2.5	0.29 ± 0.00	0.75 ± 0.03	0.98 ± 0.03	0.75 ± 0.04
		12.5	0.35 ± 0.02	0.74 ± 0.03	0.93 ± 0.03	0.71 ± 0.04

Table S8. Effect of the α -cyclodextrin polymer on the population growth of *P. aeruginosa*, determined through the measurement of the optical density

T	Tested sample		Optical density of the planktonic supernatant [-]			
			6 h	24 h	48 h	72 h
22°C	ACDPS [mM]	Control	0.05 ± 0.00	0.15 ± 0.01	0.41 ± 0.02	0.45 ± 0.04
		0.1	0.05 ± 0.00	0.11 ± 0.01	0.45 ± 0.01	0.51 ± 0.03
		0.5	0.05 ± 0.00	0.11 ± 0.01	0.45 ± 0.02	0.53 ± 0.01
		2.5	0.05 ± 0.00	0.12 ± 0.00	0.45 ± 0.03	0.49 ± 0.07
		12.5	0.06 ± 0.01	0.22 ± 0.02	0.47 ± 0.02	0.54 ± 0.03
30°C	ACDPS [mM]	Control	0.14 ± 0.01	0.53 ± 0.03	0.40 ± 0.05	0.39 ± 0.04
		0.1	0.14 ± 0.01	0.51 ± 0.02	0.29 ± 0.01	0.36 ± 0.05
		0.5	0.15 ± 0.00	0.44 ± 0.04	0.66 ± 0.03	0.56 ± 0.05
		2.5	0.14 ± 0.01	0.44 ± 0.04	0.66 ± 0.03	0.51 ± 0.04
		12.5	0.16 ± 0.01	0.27 ± 0.02	0.54 ± 0.03	0.55 ± 0.04

Table S9. Effect of the native β -cyclodextrin on the population growth of *P. aeruginosa*, determined through the measurement of the optical density

T	Tested sample		Optical density [-]			
			6 h	24 h	48 h	72 h
22°C	BCD [mM]	Control	0.01 ± 0.00	0.24 ± 0.00	0.73 ± 0.01	0.85 ± 0.01
		0.1	0.01 ± 0.00	0.24 ± 0.01	0.73 ± 0.01	0.89 ± 0.01
		0.5	0.01 ± 0.00	0.25 ± 0.01	0.73 ± 0.01	0.70 ± 0.01
		2.5	0.01 ± 0.00	0.25 ± 0.01	0.73 ± 0.01	0.94 ± 0.02
		12.5	0.01 ± 0.00	0.24 ± 0.00	0.73 ± 0.01	0.88 ± 0.01
30°C	BCD [mM]	Control	0.06 ± 0.00	0.67 ± 0.02	0.70 ± 0.02	0.64 ± 0.03
		0.1	0.06 ± 0.01	0.67 ± 0.01	0.72 ± 0.01	0.65 ± 0.02
		0.5	0.06 ± 0.00	0.70 ± 0.03	0.73 ± 0.02	0.68 ± 0.05
		2.5	0.06 ± 0.01	0.81 ± 0.03	0.94 ± 0.05	0.69 ± 0.03
		12.5	0.08 ± 0.01	0.74 ± 0.01	0.85 ± 0.04	0.72 ± 0.03

Table S10. Effect of the native β -cyclodextrin on the optical density of the planktonic supernatant of *P. aeruginosa*

T	Tested sample	Optical density of the planktonic supernatant [-]			
		6 h	24 h	48 h	72 h
22°C	Control	0.01 ± 0.00	0.09 ± 0.01	0.37 ± 0.03	0.61 ± 0.03
	BCD [mM]	0.1	0.01 ± 0.00	0.08 ± 0.01	0.35 ± 0.01
		0.5	0.01 ± 0.00	0.10 ± 0.00	0.33 ± 0.01
		2.5	0.01 ± 0.00	0.34 ± 0.02	0.65 ± 0.03
		12.5	0.01 ± 0.00	0.08 ± 0.01	0.40 ± 0.03
30°C	Control	0.08 ± 0.00	0.44 ± 0.02	0.56 ± 0.03	0.54 ± 0.02
	BCD [mM]	0.1	0.08 ± 0.01	0.44 ± 0.01	0.55 ± 0.04
		0.5	0.08 ± 0.01	0.47 ± 0.02	0.62 ± 0.01
		2.5	0.08 ± 0.00	0.45 ± 0.03	0.91 ± 0.05
		12.5	0.09 ± 0.00	0.44 ± 0.02	0.79 ± 0.03

Table S11. Effect of the randomly methylated β -cyclodextrin on the population growth of *P. aeruginosa*, determined through the measurement of the optical density

T	Tested sample	Optical density [-]			
		6 h	24 h	48 h	72 h
22°C	Control	0.01 ± 0.00	0.24 ± 0.00	0.73 ± 0.01	0.85 ± 0.01
	RAMEB [mM]	0.1	0.01 ± 0.00	0.24 ± 0.01	0.72 ± 0.01
		0.5	0.01 ± 0.00	0.25 ± 0.01	0.75 ± 0.01
		2.5	0.01 ± 0.00	0.24 ± 0.01	0.83 ± 0.01
		12.5	0.01 ± 0.00	0.22 ± 0.02	0.89 ± 0.02
30°C	Control	0.06 ± 0.00	0.67 ± 0.02	0.70 ± 0.02	0.64 ± 0.03
	RAMEB [mM]	0.1	0.05 ± 0.00	0.68 ± 0.03	0.74 ± 0.01
		0.5	0.06 ± 0.00	0.84 ± 0.01	0.72 ± 0.02
		2.5	0.06 ± 0.01	0.86 ± 0.02	1.03 ± 0.04
		12.5	0.07 ± 0.00	1.06 ± 0.03	1.17 ± 0.03

Table S12. Effect of the randomly methylated β -cyclodextrin on the optical density of the planktonic supernatant of *P. aeruginosa*

T	Tested sample	Optical density of the planktonic supernatant [-]			
		6 h	24 h	48 h	72 h
22°C	Control	0.01 ± 0.00	0.09 ± 0.01	0.37 ± 0.03	0.61 ± 0.03
	RAMEB [mM]	0.1	0.01 ± 0.00	0.08 ± 0.01	0.32 ± 0.01
		0.5	0.01 ± 0.00	0.09 ± 0.01	0.35 ± 0.02
		2.5	0.01 ± 0.00	0.10 ± 0.01	0.38 ± 0.02
		12.5	0.01 ± 0.00	0.09 ± 0.00	0.47 ± 0.03
30°C	Control	0.08 ± 0.00	0.44 ± 0.02	0.56 ± 0.03	0.54 ± 0.02
	RAMEB [mM]	0.1	0.08 ± 0.00	0.46 ± 0.02	0.50 ± 0.02
		0.5	0.08 ± 0.00	0.52 ± 0.01	0.54 ± 0.03
		2.5	0.09 ± 0.01	0.54 ± 0.02	0.99 ± 0.06
		12.5	0.09 ± 0.00	0.78 ± 0.04	1.13 ± 0.03

Table S13. Effect of the trimethyl-aminopropyl β -cyclodextrin on the population growth of *P. aeruginosa*, determined through the measurement of the optical density

T	Tested sample		Optical density [-]			
			6 h	24 h	48 h	72 h
22°C	QABCD [mM]	Control	0.02 \pm 0.00	0.40 \pm 0.01	0.80 \pm 0.02	0.89 \pm 0.03
		0.1	0.02 \pm 0.00	0.40 \pm 0.01	0.81 \pm 0.01	0.90 \pm 0.03
		0.5	0.01 \pm 0.00	0.40 \pm 0.02	0.81 \pm 0.02	0.95 \pm 0.01
		2.5	0.01 \pm 0.00	0.39 \pm 0.01	0.85 \pm 0.02	0.98 \pm 0.01
		12.5	0.01 \pm 0.00	0.38 \pm 0.00	0.82 \pm 0.03	0.97 \pm 0.03
30°C	QABCD [mM]	Control	0.11 \pm 0.02	0.69 \pm 0.01	0.59 \pm 0.02	0.54 \pm 0.03
		0.1	0.13 \pm 0.01	0.72 \pm 0.01	0.56 \pm 0.03	0.55 \pm 0.01
		0.5	0.14 \pm 0.00	0.75 \pm 0.01	0.62 \pm 0.01	0.54 \pm 0.01
		2.5	0.13 \pm 0.00	0.79 \pm 0.02	0.92 \pm 0.02	0.41 \pm 0.01
		12.5	0.13 \pm 0.00	0.90 \pm 0.05	0.92 \pm 0.04	0.96 \pm 0.04

Table S14. Effect of the trimethyl-aminopropyl β -cyclodextrin on the optical density of the planktonic supernatant of *P. aeruginosa*

T	Tested sample		Optical density of the planktonic supernatant [-]			
			6 h	24 h	48 h	72 h
22°C	QABCD [mM]	Control	0.01 \pm 0.00	0.18 \pm 0.02	0.42 \pm 0.02	0.97 \pm 0.06
		0.1	0.02 \pm 0.00	0.15 \pm 0.01	0.42 \pm 0.01	0.97 \pm 0.09
		0.5	0.02 \pm 0.00	0.17 \pm 0.01	0.42 \pm 0.01	1.07 \pm 0.05
		2.5	0.01 \pm 0.00	0.19 \pm 0.01	0.48 \pm 0.01	1.10 \pm 0.09
		12.5	0.01 \pm 0.00	0.18 \pm 0.02	0.42 \pm 0.03	1.08 \pm 0.13
30°C	QABCD [mM]	Control	0.07 \pm 0.00	0.38 \pm 0.02	0.40 \pm 0.03	0.49 \pm 0.03
		0.1	0.06 \pm 0.00	0.42 \pm 0.02	0.44 \pm 0.03	0.51 \pm 0.07
		0.5	0.07 \pm 0.00	0.42 \pm 0.01	0.50 \pm 0.04	0.48 \pm 0.04
		2.5	0.07 \pm 0.00	0.33 \pm 0.01	0.74 \pm 0.01	1.07 \pm 0.11
		12.5	0.07 \pm 0.00	0.53 \pm 0.02	0.52 \pm 0.03	1.18 \pm 0.17

Table S15. Effect of the β -cyclodextrin polymer on the population growth of *P. aeruginosa*, determined through the measurement of the optical density

T	Tested sample		Optical density [-]			
			6 h	24 h	48 h	72 h
22°C	BCDPS [mM]	Control	0.02 \pm 0.00	0.43 \pm 0.01	0.87 \pm 0.03	0.91 \pm 0.01
		0.1	0.02 \pm 0.00	0.43 \pm 0.01	0.85 \pm 0.01	0.92 \pm 0.01
		0.5	0.02 \pm 0.00	0.40 \pm 0.00	0.85 \pm 0.02	0.92 \pm 0.01
		2.5	0.02 \pm 0.00	0.43 \pm 0.01	0.87 \pm 0.02	0.93 \pm 0.02
		12.5	0.02 \pm 0.00	0.44 \pm 0.01	0.82 \pm 0.02	0.88 \pm 0.01
30°C	BCDPS [mM]	Control	0.13 \pm 0.01	0.69 \pm 0.01	0.62 \pm 0.04	0.53 \pm 0.02
		0.1	0.16 \pm 0.01	0.71 \pm 0.03	0.55 \pm 0.03	0.56 \pm 0.02
		0.5	0.17 \pm 0.02	0.81 \pm 0.02	0.60 \pm 0.03	0.56 \pm 0.01
		2.5	0.16 \pm 0.01	0.85 \pm 0.02	1.00 \pm 0.02	0.84 \pm 0.02
		12.5	0.25 \pm 0.03	0.67 \pm 0.02	0.95 \pm 0.03	0.78 \pm 0.04

Table S16. Effect of the β -cyclodextrin polymer on the optical density of the planktonic supernatant of *P. aeruginosa*

T	Tested sample		Optical density of the planktonic supernatant [-]			
			6 h	24 h	48 h	72 h
22°C	Control		0.02 ± 0.00	0.14 ± 0.01	0.47 ± 0.02	0.60 ± 0.05
	BCDPS [mM]	0.1	0.02 ± 0.00	0.16 ± 0.01	0.50 ± 0.00	0.60 ± 0.07
		0.5	0.02 ± 0.00	0.15 ± 0.02	0.48 ± 0.01	0.65 ± 0.04
		2.5	0.02 ± 0.00	0.17 ± 0.01	0.48 ± 0.01	0.62 ± 0.06
		12.5	0.02 ± 0.00	0.20 ± 0.01	0.50 ± 0.02	0.60 ± 0.05
30°C	Control		0.09 ± 0.01	0.40 ± 0.04	0.36 ± 0.03	0.36 ± 0.03
	BCDPS [mM]	0.1	0.09 ± 0.01	0.41 ± 0.05	0.48 ± 0.02	0.35 ± 0.04
		0.5	0.09 ± 0.01	0.53 ± 0.06	0.32 ± 0.02	0.35 ± 0.01
		2.5	0.10 ± 0.00	0.49 ± 0.02	0.76 ± 0.05	0.67 ± 0.04
		12.5	0.13 ± 0.01	0.44 ± 0.01	0.66 ± 0.03	0.72 ± 0.04