

**Floc Density-Driven Bacterial Community Succession Orchestrates Antibiotic
Resistance Dissemination in Activated Sludge**

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Table S1 Density (g/mL) of sucrose solution under various concentration and temperature conditions

Sucrose (%, w/V)	0°C	10°C	15°C	20°C	25°C	30°C
0	0.99987	0.99973	0.99913	0.99823	0.99707	0.99567
5	1.02033	1.0196	1.01884	1.01785	1.01661	1.01518
10	1.04135	1.0416	1.03925	1.03814	1.03679	1.0353
15	1.06304	1.06146	1.06041	1.05917	1.05772	1.05612
20	1.08546	1.08353	1.08233	1.08096	1.0794	1.07767
25	1.13274	1.10642	1.10507	1.10356	1.10188	1.10005
30	1.15769	1.13014	1.12863	1.12698	1.12517	1.12324

Table S2 Primer information corresponding to the measured gene fragment

Gene	Primer	Sequence (5'-3')	Amplicon size (bp)	Annealing Temperature (°C)
16S rRNA	FW	CCTACGGGAGGCAGCAG	193	60
	RV	TTACCGCGGCTGCTGGCAC		
<i>intl 1</i>	FW	GAGGCATTTCTGTCCTGGCT	280	60
	RV	GCAGTTGCAAACCCTCACTG		
<i>qnr B</i>	FW	CTTCACACATTGCGATCTGAC	—	—
	RV	CAACGATGCCTGGTAGTTGT		
<i>qnr S</i>	FW	GATATCGAAGGTGCCACTT	—	—
	RV	CACGGAACTCTATACCGTAGC A		
<i>tet A</i>	FW	GCTACATCCTGCTTGCCTTC	210	60
	RV	CATAGATCGCCGTGAAGAGG		
<i>tet W</i>	FW	GAGAGCCTGCTATATGCCAGC	168	60
	RV	GGGCGTATCCACAATGTTAAC		
<i>sul 1</i>	FW	CACCGGAAACATCGCTGCA	158	60
	RV	AAGTTCCGCCGCAAGGCT		
<i>sul 2</i>	FW	TCCGGTGGAGGCCGGTATCTG G	191	55
	RV	CGGGAATGCCATCTGCCTTGA G		

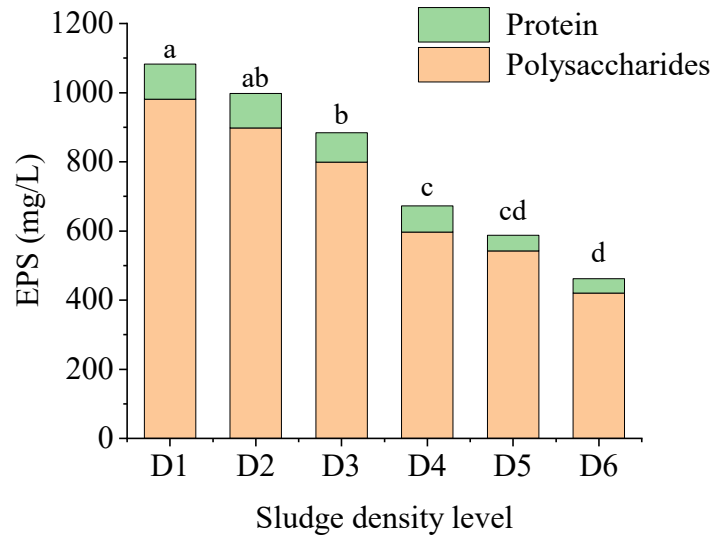


Fig. S1 Extracellular polymeric substances (EPS) concentrations across sludge flocs of varying densities. Different letters indicate significant differences among groups ($p < 0.05$). EPS was extracted using a modified heat method and quantified using the Folin–phenol (protein, 750 nm) and anthrone (polysaccharide, 625 nm) assays.