

Table S1. Susceptibility breakpoints (5) of antibiotics tested in this study.

Antibiotic ^a	Susceptibility breakpoints (mm)		
	Susceptible	Intermediate resistance	Resistant
Amikacin (AMK)	≥17	15-16	≤14
Amoxicillin-clavulanic acid (AMC)	≥18	14-17	≤13
Cefoxitin (FOX)	≥18	15-17	≤14
Ceftriaxone (CRO)	≥21	14-20	≤13
Cephalothin (KF)	≥18	15-17	≤14
Chloramphenicol (C)	≥18	13-17	≤12
Ciprofloxacin (CIP)	≥21	16-20	≤15
Nalidixic acid (NA)	≥19	14-18	≤13
Tetracycline (TE)	≥19	15-18	≤14
Ceftiofur (XNL)	≥21	18-20	≤17
Trimethoprim-sulfamethoxazole (SXT)	≥16	11-15	≤10

^a Antibiotics abbreviations are given in parentheses.

Table S2. Measured diameters (in mm) of antibiotic inhibition zones of *S. typhimurium* exposed to groundwater with amoxicillin (0.05 µg/L) for given time periods compared to control group.

Antibiotics	Week 0	Week 1	Week 2	Week 3	Week 4
AMK	24.81 ± 2.79 (S)	25.20 ± 1.33 (S)	27.88 ± 2.62 (S)	26.72 ± 2.06 (S)	24.60 ± 2.12 (S)
AMC	25.38 ± 2.13 (S)	26.00 ± 2.11 (S)	29.16 ± 2.41 (S)	29.76 ± 2.58 (S)	31.52 ± 3.41 (S)
FOX	25.16 ± 2.32 (S)	26.96 ± 1.78 (S)	28.40 ± 1.99 (S)	28.12 ± 1.67 (S)	29.58 ± 2.51 (S)
CRO	33.20 ± 3.79 (S)	34.20 ± 2.43 (S)	32.86 ± 3.65 (S)	38.92 ± 3.21 (S)	36.18 ± 3.28 (S)
KF	23.72 ± 2.36 (S)	25.62 ± 1.65 (S)	27.12 ± 2.93 (S)	28.26 ± 2.47 (S)	26.38 ± 2.14 (S)
C	26.92 ± 2.42 (S)	26.96 ± 1.09 (S)	24.10 ± 2.08 (S)	27.00 ± 2.93 (S)	27.32 ± 2.65 (S)
CIP	38.18 ± 2.86 (S)	38.20 ± 3.01 (S)	37.46 ± 3.48 (S)	38.28 ± 3.46 (S)	35.92 ± 3.43 (S)
NA	19.88 ± 1.25 (S)	20.96 ± 2.07 (S)	22.28 ± 2.39 (S)	24.06 ± 1.78 (S)^a	24.78 ± 2.54 (S)
TE	23.21 ± 1.98 (S)	25.82 ± 1.17 (S)	26.66 ± 2.08 (S)	28.96 ± 2.15 (S)	26.08 ± 2.42 (S)
XNL	27.46 ± 2.12 (S)	25.46 ± 2.73 (S)	26.00 ± 2.42 (S)	27.96 ± 2.19 (S)	28.36 ± 2.74 (S)
SXT	34.00 ± 3.11 (S)	32.50 ± 3.74 (S)	35.56 ± 2.69 (S)	36.02 ± 3.17 (S)	35.88 ± 3.48 (S)

^a Numbers in bold denote the changes in the inhibition zone diameter are statistically significant compared to the control group

Table S3. Measured diameters (in mm) of antibiotic inhibition zones of *S. typhimurium* exposed to groundwater with amoxicillin (1 µg/L) for given time periods compared to control group.

Antibiotics	Week 0	Week 1	Week 2	Week 3	Week 4
AMK	24.81 ± 2.79 (S)	23.46 ± 1.72 (S)	24.68 ± 2.35 (S)	26.78 ± 2.11 (S)	26.08 ± 2.77 (S)
AMC	25.38 ± 2.13 (S)	26.38 ± 2.74 (S)	24.10 ± 2.66 (S)	30.32 ± 3.54 (S)	29.18 ± 2.52 (S)
FOX	25.16 ± 2.32 (S)	25.18 ± 1.25 (S)	27.72 ± 2.06 (S)	29.62 ± 1.74 (S)	29.54 ± 2.10 (S)
CRO	33.20 ± 3.79 (S)	32.64 ± 3.12 (S)	34.84 ± 3.58 (S)	37.12 ± 3.32 (S)	34.98 ± 3.53 (S)
KF	23.72 ± 2.36 (S)	25.82 ± 1.17 (S)	26.94 ± 2.16 (S)	26.48 ± 2.42 (S)	27.68 ± 2.66 (S)
C	26.92 ± 2.42 (S)	28.46 ± 2.81 (S)	25.94 ± 2.45 (S)	27.94 ± 2.55 (S)	28.58 ± 2.27 (S)
CIP	38.18 ± 2.86 (S)	36.84 ± 3.51 (S)	32.06 ± 3.21 (S)^a	39.30 ± 3.22 (S)	33.06 ± 3.19 (S)
NA	19.88 ± 1.25 (S)	20.18 ± 1.94 (S)	21.38 ± 1.77 (S)	24.06 ± 1.78 (S)	23.06 ± 2.11 (S)
TE	23.21 ± 1.98 (S)	26.56 ± 2.08 (S)	27.08 ± 2.74 (S)	25.96 ± 2.39 (S)	26.46 ± 2.67 (S)
XNL	27.46 ± 2.12 (S)	26.76 ± 2.73 (S)	25.38 ± 2.57 (S)	26.46 ± 2.87 (S)	26.50 ± 2.76 (S)
SXT	34.00 ± 3.11 (S)	33.90 ± 3.41 (S)	34.72 ± 3.03 (S)	36.76 ± 2.61 (S)	35.32 ± 3.20 (S)

^a Numbers in bold denote the changes in the inhibition zone diameter are statistically significant compared to the control group

Table S4. Measured diameters (in mm) of antibiotic inhibition zones of *S. typhimurium* exposed to groundwater with tetracycline (0.05 µg/L) for given time periods compared to control group.

Antibiotics	Week 0	Week 1	Week 2	Week 3	Week 4
AMK	24.81 ± 2.79 (S)	26.38 ± 2.14 (S)	26.46 ± 2.25 (S)	26.04 ± 1.76 (S)	27.94 ± 2.04 (S)
AMC	25.38 ± 2.13 (S)	24.62 ± 2.63 (S)	27.78 ± 2.41 (S)	30.22 ± 3.36 (S)	28.14 ± 1.68 (S)
FOX	25.16 ± 2.32 (S)	27.68 ± 2.17 (S)	29.62 ± 2.77 (S)	28.94 ± 2.18 (S)	28.84 ± 2.25 (S)
CRO	33.20 ± 3.79 (S)	36.40 ± 4.09 (S)	34.26 ± 2.69 (S)	35.98 ± 2.81 (S)	35.94 ± 3.09 (S)
KF	23.72 ± 2.36 (S)	23.70 ± 2.81 (S)	27.60 ± 2.47 (S)	26.20 ± 1.22 (S)	28.20 ± 1.71 (S)
C	26.92 ± 2.42 (S)	30.78 ± 3.44 (S)	28.08 ± 2.05 (S)	28.14 ± 1.92 (S)	27.94 ± 2.18 (S)
CIP	38.18 ± 2.86 (S)	38.66 ± 3.74 (S)	32.54 ± 3.73 (S)	35.64 ± 3.73 (S)	39.80 ± 2.62 (S)
NA	19.88 ± 1.25 (S)	20.72 ± 0.81 (S)	23.24 ± 2.84 (S)	24.66 ± 1.69 (S)	25.82 ± 2.59 (S)
TE	23.21 ± 1.98 (S)	25.94 ± 2.10 (S)	26.40 ± 2.45 (S)	25.24 ± 1.90 (S)	27.66 ± 2.50 (S)
XNL	27.46 ± 2.12 (S)	21.20 ± 2.94 (S)^a	25.02 ± 1.97 (S)	27.94 ± 2.14 (S)	27.24 ± 2.19 (S)
SXT	34.00 ± 3.11 (S)	34.74 ± 2.88 (S)	36.52 ± 2.88 (S)	35.94 ± 3.29 (S)	34.50 ± 3.71 (S)

^a Numbers in bold denote the changes in the inhibition zone diameter are statistically significant compared to the control group

Table S5. Measured diameters (in mm) of antibiotic inhibition zones of *S. typhimurium* exposed to groundwater with tetracycline (1 µg/L) for given time periods compared to control group.

Antibiotics	Week 0	Week 1	Week 2	Week 3	Week 4
AMK	24.81 ± 2.79 (S)	24.50 ± 1.09 (S)	27.04 ± 2.51 (S)	25.84 ± 2.71 (S)	25.56 ± 1.41 (S)
AMC	25.38 ± 2.13 (S)	27.74 ± 2.11 (S)	29.48 ± 2.84 (S)	31.08 ± 3.16 (S)	32.04 ± 3.46 (S)
FOX	25.16 ± 2.32 (S)	28.86 ± 2.49 (S)	30.20 ± 3.17 (S)	30.50 ± 3.73 (S)	32.16 ± 3.87 (S)
CRO	33.20 ± 3.79 (S)	34.44 ± 3.25 (S)	36.86 ± 3.22 (S)	38.56 ± 3.51 (S)	37.56 ± 3.22 (S)
KF	23.72 ± 2.36 (S)	25.64 ± 2.60 (S)	27.60 ± 2.47 (S)	28.54 ± 2.58 (S)	31.90 ± 3.51 (S)
C	26.92 ± 2.42 (S)	29.70 ± 2.52 (S)	27.94 ± 1.51 (S)	28.86 ± 2.09 (S)	28.60 ± 2.84 (S)
CIP	38.18 ± 2.86 (S)	39.40 ± 3.26 (S)	35.82 ± 3.29 (S)	36.36 ± 2.83 (S)	34.96 ± 3.16 (S)
NA	19.88 ± 1.25 (S)	22.26 ± 1.19 (S)	25.22 ± 2.87 (S)^a	24.40 ± 1.52 (S)	28.22 ± 2.63 (S)
TE	23.21 ± 1.98 (S)	25.24 ± 1.56 (S)	27.76 ± 2.63 (S)	29.18 ± 2.28 (S)	28.06 ± 2.85 (S)
XNL	27.46 ± 2.12 (S)	27.20 ± 2.44 (S)	29.06 ± 2.51 (S)	28.20 ± 1.87 (S)	28.18 ± 2.40 (S)
SXT	34.00 ± 3.11 (S)	34.64 ± 3.16 (S)	36.40 ± 3.08 (S)	35.98 ± 3.40 (S)	37.72 ± 3.51 (S)

^a Numbers in bold denote the changes in the inhibition zone diameter are statistically significant compared to the control group