

Ecological Effects and Multi-Factor Synergistic Driving Mechanisms of Antibiotic Mixtures in Aquatic-Terrestrial Transition Zones

Bo Zhu ^{a,b,c}, Tao Wang^{a,b,c,d}, Jian Huang^{a,c,d*}, Hua Zhang^{a,c,d}, Mengyao Zheng^{a,c,d}, Chunhua He^{a,c,d}

^a School of Environmental and Energy Engineering, Anhui Jianzhu University, Hefei 230601, China

^b Hefei Water Supply Group, Co., Ltd, Hefei 230011, China

^c Anhui Provincial Key Laboratory of Environmental Pollution Control and Resource Reuse, Hefei 230601, China

^d Pollution Control and Resource Utilization in Industrial Parks Joint Laboratory of Anhui Province, Hefei 230601, China

Corresponding author (one person only)

Jian Huang, School of Environmental and Energy Engineering, Anhui Jianzhu University, Hefei, 230601, P.R. China (E-mail: huangjianpaper@163.com)

Supplementary Information

Table S1: Coordinates of sampling sites

Site	Sampling River	Samples	Longitude	Latitude
C1	Pai River	Water	117°17'13.63" E	31°39'53.20" N
C2	Jiangkou River	Water	117°17'29.55" E	31°36'27.41" N
C3	Hangbu River	Water	117°21'43.07" E	31°32'56.89" N
C4	Baishitian River	Water	117°23'57.49" E	31°31'50.00" N
C5	ZhaoRiver	Water	117°33'3.16" E	31°25'37.25" N
C6	Zhegao River	Water	117°47'29.26" E	31°37'18.66" N
C7	Jiyu Rriver	Water	117°40'46.76" E	31°39'47.52" N
C8	Jiongyang River	Water	117°38'16.32" E	31°39'21.02" N
C9	Nanfei River	Water	117°24'25.29" E	31°42'21.50" N
C10	Shiwuli River	Water	117°21'43.69" E	31°43'16.70" N

Table S2: Toxicity data of antibiotics to the sensitive aquatic species

Antibiotic	PNEC (ng/L)					References
	Algae	Daphnid	Fish	Plant	Invertebrates	
OFI	16	3130	160000			1
NOR	38	14490000	14000000			2
CIP	17			203		3
ERY	20	220	1000000			4
SDZ	2220			70	221000	1
TCY	3300	2870	27090			3
CTC	50	1300	9300			3
SMX	520		562500		210	5
ROX	10		288300		9100	5
ENR	49		100000		14300	5
SMZ	1740					6
TC	1000					6
DOX				316		7

References

- 1 A. Białk-Bielińska, S. Stolte, J. Arning, U. Uebers, A. Bösch, P. Stepnowski and M. Matzke, *Chemosphere*, 2011, **85**, 928–933.
- 2 P. Vazquez-Roig, V. Andreu, C. Blasco and Y. Picó, *Science of the Total Environment*, 2012, **440**, 24–32.
- 3 S. Li, W. Shi, H. Li, N. Xu, R. Zhang, X. Chen, W. Sun, D. Wen, S. He, J. Pan, Z. He and Y. Fan, *Science of the Total Environment*, 2018, **636**, 1009–1019.
- 4 M. Isidori, M. Lavorgna, A. Nardelli, L. Pascarella and A. Parrella, *Science of the Total Environment*, 2005, **346**, 87–98.
- 5 H. Xie, X. Wang, J. Chen, X. Li, G. Jia, Y. Zou, Y. Zhang and Y. Cui, *Science of the Total Environment*, 2019, **656**, 946–951.
- 6 G. Wang, S. Zhou, X. Han, L. Zhang, S. Ding, Y. Li, D. Zhang and K. Zarin, *Journal of Hazardous Materials*, 2020, **389**, 122110.
- 7 L. Wang, Y. Wang, H. Li, Y. Zhu and R. Liu, *Journal of Environmental Management*, 2022, **305**, 114382.