

Effect of stepwise exposure to high-level erythromycin on anaerobic digestion

Yanxiang Zhang ¹; Chunxing Li ², Xinyu Zhu ^{3*} and Irini Angelidaki ⁴

¹ *School of Environmental and Material Engineering, Yantai University, Yantai, Shandong, 264005, China*

² *State Key Laboratory of Pollution Control and Resource Reuse, School of the Environment, Nanjing University, Nanjing 210023, China*

³ *Key Laboratory of Coastal Environment and Resources of Zhejiang Province, School of Engineering, Westlake University, Hangzhou 310030, China*

⁴ *Department of Chemical and Biochemical Engineering, Technical University of Denmark, Kgs. Lyngby DK-2800, Denmark*

* *Correspondence: zhuxinyu@westlake.edu.cn*

Table S1. qPCR primer sequences for antibiotic resistance genes analysis.

Resistance mechanism	gene	5' to 3'	Reference
esterase gene	<i>ereA</i>	F: CCTGTGGTACGGAGAATTCATGT R: ACCGCATTTCGCTTTGCTT	[1-3]
	<i>ereB</i>	F: GCTTTATTTTCAGGAGGCGGAAT R: TTTTAAATGCCACAGCACAGAATC	
phosphorylase gene	<i>mphA</i>	F: CTGACGCGCTCCGTGTT	
	<i>-01</i>	R: GGTGGTGCATGGCGATCT	
	<i>mphB</i>	F: CGCAGCGCTTGATCTTGTA R: TTACTGCATCCATACGCTGCTT	
methylase gene		F: TTGAGAAGGGATTTGCGAAAAG	
	<i>ermA</i>	R: ATATCCATCTCCACCATTAATAGTAAACC F: TAAAGGGCATTTAACGACGAAA	
	<i>ermB</i>	R: TTTATACCTCTGTTTGTTAGGGAATTGAA	
	<i>ermC</i>	F: TTTGAAATCGGCTCAGGAAAA R: ATGGTCTATTTCAATGGCAGTTACG	
	<i>ermX</i>	F: GCTCAGTGGTCCCCATGGT R: ATCCCCCGTCAACGTTT	
efflux pump gene	<i>mefA</i>	F: CCGTAGCATTGGAACAGCTTTT R: AAACGGAGTATAAGAGTGCTGCAA	
	<i>mefE</i>	F: CGTATTGGGTGCTGTGATTG R: TATGCACAGGCGTTCCATTA	

References

- [1] M.T. Guo, Q.B. Yuan, J. Yang, Ultraviolet reduction of erythromycin and tetracycline resistant heterotrophic bacteria and their resistance genes in municipal wastewater, *Chemosphere*, 93 (2013) 2864-2868.
- [2] M. Liu, R. Ding, Y. Zhang, Y. Gao, Z. Tian, T. Zhang, M. Yang, Abundance and distribution of Macrolide-Lincosamide-Streptogramin resistance genes in an anaerobic-aerobic system treating spiramycin production wastewater, *Water Res*, 63 (2014) 33-41.
- [3] Y. Chen, P. Li, Y. Huang, K. Yu, H. Chen, K. Cui, Q. Huang, J. Zhang, K. Yew-Hoong Gin, Y. He, Environmental media exert a bottleneck in driving the dynamics of antibiotic resistance genes in modern aquatic environment, *Water Res*, 162 (2019) 127-138.