Supporting information

Culture-dependent enumeration methods failed to simultaneously detect disinfectant-injured and genetically-modified Escherichia coli in drinking water

Jing Li,[1,#] Lu Liu,[1,#] Dong Yang,[1,#] Wei-Li Liu,[1] Zhi-Qiang Shen,[1] Zhi-Gang Qiu,[1] Ai-ming Hou,[1] Da-Ning Wang,[1] Chen-Shi Ding,[1] Jun-Wen Li,[1] Hong-Mei Qu,[2] Jian-Hua Guo,[3*] Min Jin [1*]

[1]Department of Environment and Health, Tianjin Institute of Health and Environmental Medicine, Key Laboratory of Risk Assessment and Control for Environment & Food Safety, Tianjin 300050, China;

[2]College of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, China;

[3]Advanced Water Management Centre, University of Queensland, St Lucia, Brisbane, QLD 4072, Australia.

Corresponding author: Min Jin, Telephone: +86-22-84655418; E-mail: jinminzh@126.com; Jianhua Guo, Telephone: +61-7-33463215; E-mail: j.guo@awmc.uq.edu.au;

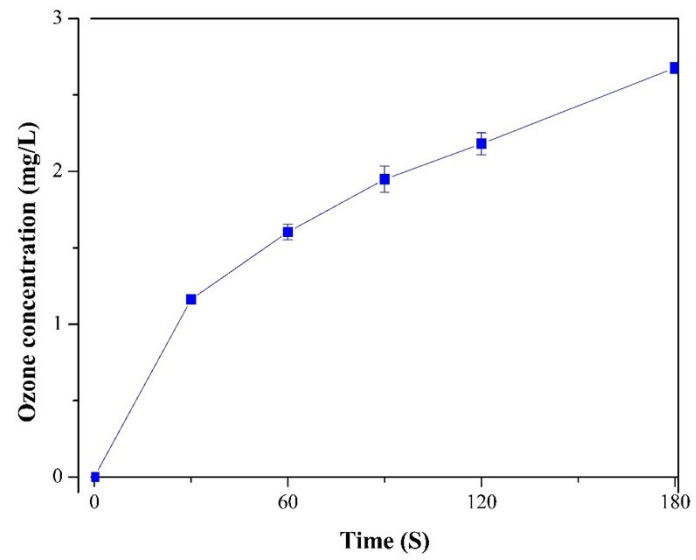This supporting document includes 1 figure and 3 tables.

Figure S1. Ozone concentration in PBS buffer without *E. coli* as a function of time (pH 7.2, 20 °C).

Table S1. Comparison of detection rate of injured *E. coli* K12 by different enumeration

methods

Trial	Chlorine-injured					Ozone-injured				
	Injury (%)	Detection rate (%)				Injury (%)	Detection rate (%)			
		MF	MTF	EST	TSM		MF	MTF	EST	TSM
1	45.1	0	100	0	68.8	73.7	0	100	0	73.3
2	58.3	0	100	0	77.0	92.1	0	100	3	95.3
3	69.2	0	100	0	33.3	96.2	0	98.2	0.7	91.4
4	70	0	100	0	28.8	97.7	0	56.0	4.6	33.3
5	80	0	100	0	100	100	0	21.7	0	30.4
6	80	0	100	0	100	_	_	_	_	_
7	90.8	0	100	0	50.8	_	_	_	_	_
8	95.4	0	100	0	43.4	_	_	_	_	_

Table S2. Comparison of detection rates of injured *E. coli* HB101 by different enumeration

methods

Trial	Chlorine-injured					Ozone-injured				
	Injury (%)	Detection rate (%)				Injury (%)	Detection rate (%)			
		MF	MTF	EST	TSM		MF	MTF	EST	TSM
1	67.4	0	0	0	0	53.0	0	1.4	0	0
2	98.7	0	0	39.5	0	73.1	0	2.8	0	0
3	98.9	0	0	20	0	100	0	0	0	0
4	99.1	0	0	0	0	100	0	0	0	0
5	100	0	0	0	0	100	0	8.7	25.7	0
6	100	0	0	15.5	0	100	0	0	5.8	0
7	100	0	0	45.4	0	100	0	0	2.9	0
8	100	0	0	0	0	100	0	0	2.1	0

Table S3. Comparison of detection rates of injured *E. coli* HB101 (pUC18) by different

enumeration methods

Trial	Chlorine-injured					Ozone-injured				
	Injury (%)	Detection rate (%)				Injury (%)	Detection rate (%)			
		MF	MTF	EST	TSM		MF	MTF	EST	TSM
1	100	0	0	53.6	0	100	0	0	0	0
2	100	0	0	0	0	100	0	21.5	0	0
3	100	0	0	45.4	4.3	100	0	0	0	0
4	100	0	0	34.9	0	100	0	0	19.5	0
5	100	0	0	15	3.7	–	–	–	–	–
6	100	0	0	29.8	2.2	–	–	–	–	–
7	100	0	0	17.9	0	–	–	–	–	–
8	100	0	0	16.8	3.2	–	–	–	–	–