

## Supplementary material

### **Optimization of cultural conditions for isolated *Arthrobacter* sp. ZXY-2, an effective atrazine-degrading and salt-adaptive bacterium**

Xinyue Zhao<sup>1,2</sup>, Li Wang<sup>1</sup>, Linna Du<sup>3</sup>, Jixian Yang<sup>1</sup>, Jing Dong<sup>1</sup>, Fang Ma<sup>1,\*</sup>

(1. State Key Laboratory of Urban Water Resource and Environment, Harbin Institute of

Technology, Harbin 150090, China;

2. Section of Sanitary Engineering, Department of Water Management, Delft University of

Technology, Delft, 2628CN, the Netherlands;

3. Department of Agriculture and Biotechnology, Wenzhou Vocational College of Science and

Technology, Wenzhou 325006, China)

\*Corresponding author at: State Key Laboratory of Urban Water Resource and Environment, School of Municipal and Environmental Engineering, Harbin Institute of Technology, Harbin 150090, China.

Corresponding author email address: [mafang@hit.edu.cn](mailto:mafang@hit.edu.cn) ; Telephone/fax number: 86-045186283008

First author email address: [X.Zhao-3@tudelft.nl](mailto:X.Zhao-3@tudelft.nl)



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41	+1	+1	+1	+1	-1	-1	-1	-1	+1	-1	-1	-1	-1	+1	+1	51.69
42	-1	+1	-1	-1	-1	+1	+1	-1	+1	+1	-1	-1	+1	-1	-1	32.54
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51.54
44	+1	+1	-1	+1	+1	-1	-1	+1	-1	-1	+1	+1	+1	-1	+1	81.24
45	+1	-1	+1	-1	+1	-1	-1	-1	+1	+1	-1	+1	+1	-1	-1	39.16
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51.94
47	-1	+1	-1	-1	+1	+1	+1	+1	-1	+1	+1	+1	+1	+1	-1	57.22
48	+1	-1	+1	+1	+1	+1	+1	-1	-1	-1	-1	+1	-1	-1	-1	98.31
49	-1	+1	+1	+1	+1	-1	+1	+1	+1	+1	+1	-1	-1	-1	-1	55.18
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51.61
51	-1	-1	-1	-1	+1	-1	-1	-1	-1	+1	+1	-1	+1	-1	+1	10.09
52	-1	+1	-1	+1	-1	-1	+1	+1	+1	+1	-1	+1	+1	+1	+1	66.43
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51.63
54	-1	+1	+1	-1	-1	+1	-1	-1	+1	+1	+1	-1	+1	-1	+1	26.81

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**Table S2** Observed and predicted values of atrazine degradation for the central composite design matrix of six variables.

Run No.	Temperature	pH	Inoculum	Sucrose	Na <sub>2</sub> HPO <sub>4</sub> ·12H <sub>2</sub> O	atrazine	Atrazine degradation (%)	
	(X <sub>1</sub> )	(X <sub>2</sub> )	size(X <sub>3</sub> )	(X <sub>4</sub> )	(X <sub>5</sub> )	concentration(X <sub>6</sub> )	Observed	Predicted
1	40(+1)	7(-1)	10(+1)	3(+1)	12(+1)	50(-1)	62.25	61.88
2	30(-1)	7(-1)	5(-1)	1(-1)	12(+1)	100(+1)	19.62	21.55
3	40(+1)	9(+1)	5(-1)	3(+1)	12(+1)	50(-1)	62.15	64.28
4	30(-1)	7(-1)	5(-1)	3(+1)	12(+1)	50(-1)	63.33	64.24
5	40(+1)	7(-1)	10(+1)	1(-1)	12(+1)	100(+1)	51.98	52.26
6	30(-1)	7(-1)	5(-1)	1(-1)	6(-1)	50(-1)	51.03	50.63
7	40(+1)	9(+1)	10(+1)	3(+1)	6(-1)	50(-1)	69.82	67.87
8	30(-1)	9(+1)	5(-1)	3(+1)	6(-1)	50(-1)	63.94	63.65
9	40(+1)	7(-1)	5(-1)	1(-1)	6(-1)	100(+1)	24.56	25.51
10	30(-1)	7(-1)	10(+1)	1(-1)	6(-1)	100(+1)	50.78	48.64
11	30(-1)	9(+1)	5(-1)	1(-1)	12(+1)	50(-1)	59.89	58.04
12	40(+1)	9(+1)	10(+1)	3(+1)	12(+1)	100(+1)	59.05	59.43
13	30(-1)	9(+1)	10(+1)	1(-1)	6(-1)	50(-1)	66.34	68.30
14	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	47.21	49.22
15	30(-1)	7(-1)	5(-1)	3(+1)	6(-1)	100(+1)	27.73	26.54
16	30(-1)	7(-1)	10(+1)	3(+1)	12(+1)	100(+1)	56.85	56.77
17	40(+1)	9(+1)	10(+1)	1(-1)	12(+1)	50(-1)	65.07	66.25
18	40(+1)	7(-1)	5(-1)	3(+1)	6(-1)	50(-1)	53.11	54.12
19	30(-1)	7(-1)	10(+1)	3(+1)	6(-1)	50(-1)	65.01	64.69
20	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	49.88	49.22
21	40(+1)	7(-1)	10(+1)	1(-1)	6(-1)	50(-1)	63.13	61.96
22	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	47.79	49.22
23	40(+1)	9(+1)	10(+1)	1(-1)	6(-1)	100(+1)	62.69	61.77
24	40(+1)	9(+1)	5(-1)	3(+1)	6(-1)	100(+1)	41.35	39.59
25	40(+1)	7(-1)	5(-1)	3(+1)	12(+1)	100(+1)	34.81	32.84
26	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	51.01	49.22
27	40(+1)	9(+1)	5(-1)	1(-1)	12(+1)	100(+1)	31.23	31.53
28	30(-1)	9(+1)	10(+1)	3(+1)	12(+1)	50(-1)	73.21	72.25
29	30(-1)	9(+1)	10(+1)	1(-1)	12(+1)	100(+1)	53.09	52.07
30	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	51.05	49.22
31	30(-1)	9(+1)	5(-1)	1(-1)	6(-1)	100(+1)	24.11	24.47
32	40(+1)	9(+1)	5(-1)	1(-1)	6(-1)	50(-1)	61.07	61.13
33	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	49.15	49.22
34	30(-1)	9(+1)	10(+1)	3(+1)	6(-1)	100(+1)	62.33	64.48
35	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	50.31	49.22
36	30(-1)	9(+1)	5(-1)	3(+1)	12(+1)	100(+1)	34.66	35.82
37	40(+1)	7(-1)	5(-1)	1(-1)	12(+1)	50(-1)	62.09	59.93
38	40(+1)	7(-1)	10(+1)	3(+1)	6(-1)	100(+1)	51.43	53.27
39	30(-1)	7(-1)	10(+1)	1(-1)	12(+1)	50(-1)	64.39	66.14

40	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	47.19	49.22
41	35(0)	8(0)	7.5(0)	2(0)	6(-1)	75(0)	46.61	48.42
42	30(-1)	8(0)	7.5(0)	2(0)	9(0)	75(0)	45.96	43.97
43	35(0)	8(0)	7.5(0)	1(-1)	9(0)	75(0)	42.02	42.90
44	35(0)	8(0)	5(-1)	2(0)	9(0)	75(0)	41.14	41.94
45	35(0)	8(0)	7.5(0)	2(0)	12(+1)	75(0)	51.21	49.59
46	35(0)	8(0)	10(+1)	2(0)	9(0)	75(0)	59.06	58.45
47	35(0)	8(0)	7.5(0)	2(0)	9(0)	100(+1)	41.91	41.64
48	35(0)	9(+1)	7.5(0)	2(0)	9(0)	75(0)	52.98	52.05
49	35(0)	8(0)	7.5(0)	2(0)	9(0)	50(0)	61.11	61.57
50	40(+1)	8(0)	7.5(0)	2(0)	9(0)	75(0)	42.76	44.93
51	35(0)	8(0)	7.5(0)	3(+1)	9(0)	75(0)	48.06	47.37
52	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	47.99	47.66
53	35(0)	8(0)	7.5(0)	2(0)	9(0)	75(0)	48.45	47.66
54	35(0)	7(-1)	7.5(0)	2(0)	9(0)	75(0)	45.31	46.43

Note: factors' unit refers to those in Table 1.