

*Supporting Information For:*

# **The Dynamic Shift of Bacterial Communities in Hybrid Anaerobic Baffled Reactor (ABR)—Aerobic Granules Process for Berberine Pharmaceutical Wastewater Treatment**

**Yan Wang <sup>1,2</sup>, Yongqiang Liu <sup>3</sup>, Juan Li <sup>1,2</sup>, Ruirui Ma <sup>1,2</sup>, Ping Zeng <sup>1,2,\*</sup>, Choon Aun Ng <sup>4</sup> and Fenghua Liu <sup>5</sup>**

<sup>1</sup> State Key Laboratory of Environmental Criteria and Risk Assessment, Chinese Research Academy of Environmental Sciences, Beijing 100012, China

<sup>2</sup> Department of Urban Water Environmental Research, Chinese Research Academy of Environmental Sciences, Beijing 100012, China

<sup>3</sup> Faculty of Engineering and Physical Sciences, University of Southampton, Southampton SO17 1BJ, UK

<sup>4</sup> Department of Environmental Engineering, Faculty of Engineering and Green Technology, Universiti Tunku Abdul Rahman, Kampar 31900, Perak, Malaysia

<sup>5</sup> CECEP Engineering Technology Research Institute Co., Ltd., Beijing 100082, China

\* Correspondence: zengping@craes.org.cn; Mailing address: Chaoyang district, Beiyuan Road, Dayangfang 8, Beijing, China Phone: 86-10-84917906. Fax: 86-10-84917906

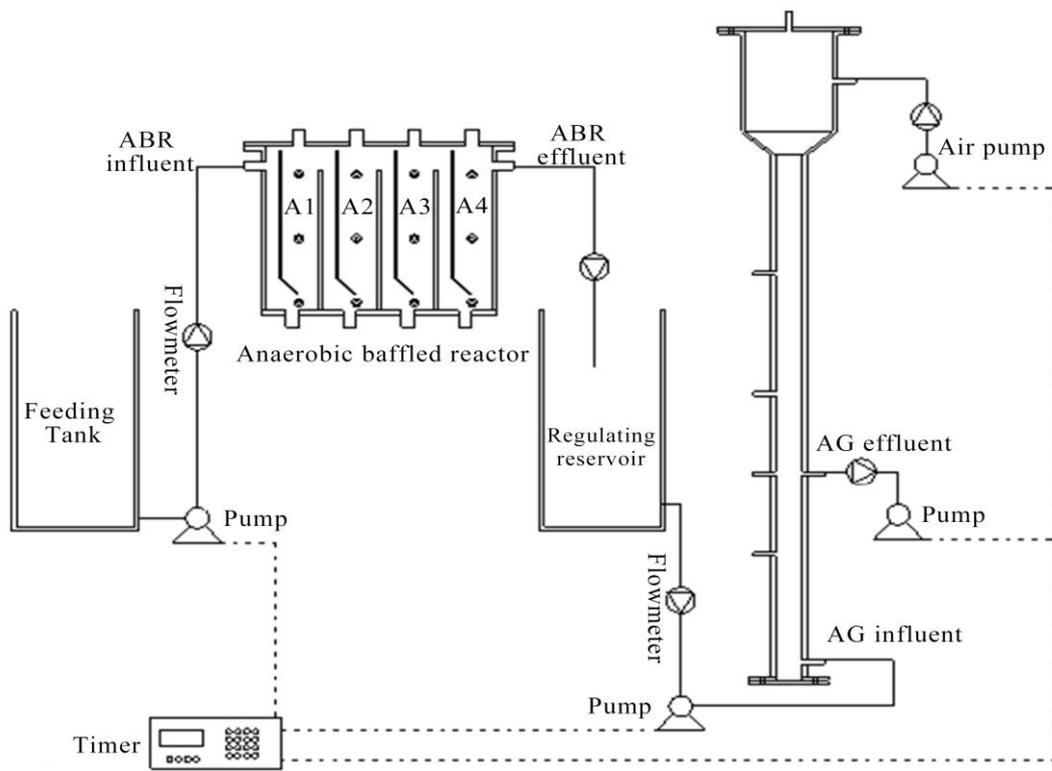
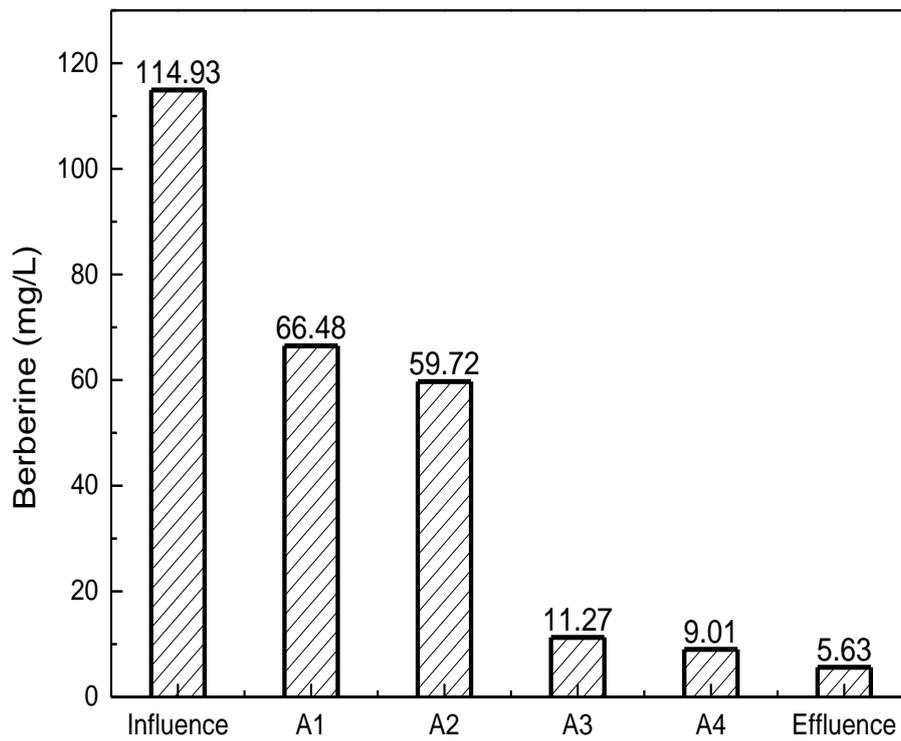


Figure. S1. The image of the hybrid ABR-AGS system.



**Figure. S2** The change in the berberine concentration from A1 to A4

Table S1 Physical and chemical properties of inoculum

Reactor	SVI (ml/g)	MLVSS/MLSS (%)	MLSS (mg/L)
ABR	102.4	82	13570
AGS	95.7	27	2350

Table S2 The operation conditions of the hybrid ABR–AGS system

Reactor	Parameter	Value
ABR	Influent berberine concentration (mg/L)	120
	HRT (d)	3
	OLR(kg/(m <sup>3</sup> .d))	0.8-1.3
AGS	HRT (hr)	6
	OLR(kg/(m <sup>3</sup> .d))	3

Table S3 The composition of influent wastewater

Components	Concentration (mg/L)
COD	4253
NH <sub>4</sub> Cl	535
KH <sub>2</sub> PO <sub>4</sub>	104.6
CaCl <sub>2</sub> ·2H <sub>2</sub> O	19.3
MgSO <sub>4</sub> ·7H <sub>2</sub> O	71.0
FeSO <sub>4</sub> ·7H <sub>2</sub> O	17.4
Berberine	121.6