Supplementary Materials

Table S1. Physicochemical Characteristics of BACs

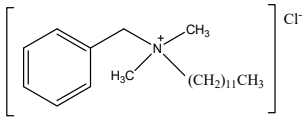
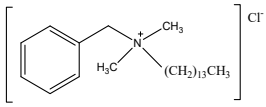
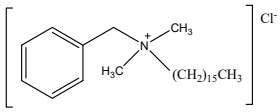
Substance	BAC_{12}	BAC_{14}	BAC_{16}
Structure			
CAS No.	139-07-1	139-08-2	122-18-9
Molecular formula	$C_{21}H_{38}NCl$	$C_{23}H_{42}NCl$	$C_{25}H_{46}NCl$
Molecular weight	339.99	368.04	396.09
log K_{OW}	2.93	3.91	4.89

Table S2. Characteristics of PAC

Adsorbent	PAC
Zeta potential (mV)	−26.49
Surface area (m^2 g^{-1})	945
Pore volume (cm^3 g^{-1})	0.52
Pore size (Å)	21.9
Bulk density (g cm^{-3})	0.5-0.8
Point of zero charge (pH_{pzc})	6.48

Table S3. Adsorption Capacity of BACs Mixture

Mixture	BAC	Adsorption capacity (mg g^{-1})		Adsorption difference (%)
		Single	Binary	
BAC_{12} & BAC_{14}	BAC_{12}	145.3	52.4	-64.0
	BAC_{14}	158.7	144.1	-9.2
BAC_{12} & BAC_{16}	BAC_{12}	145.3	48.5	-66.7
	BAC_{16}	160.0	156.6	-2.1
BAC_{14} & BAC_{16}	BAC_{14}	158.7	82.0	-48.3
	BAC_{16}	160.0	121.1	-24.3
BAC_{12} & BAC_{14} & BAC_{16}	BAC_{12}	145.3	34.8	-76.0
	BAC_{14}	158.7	76.1	-52.0
	BAC_{16}	160.0	111.2	-30.5

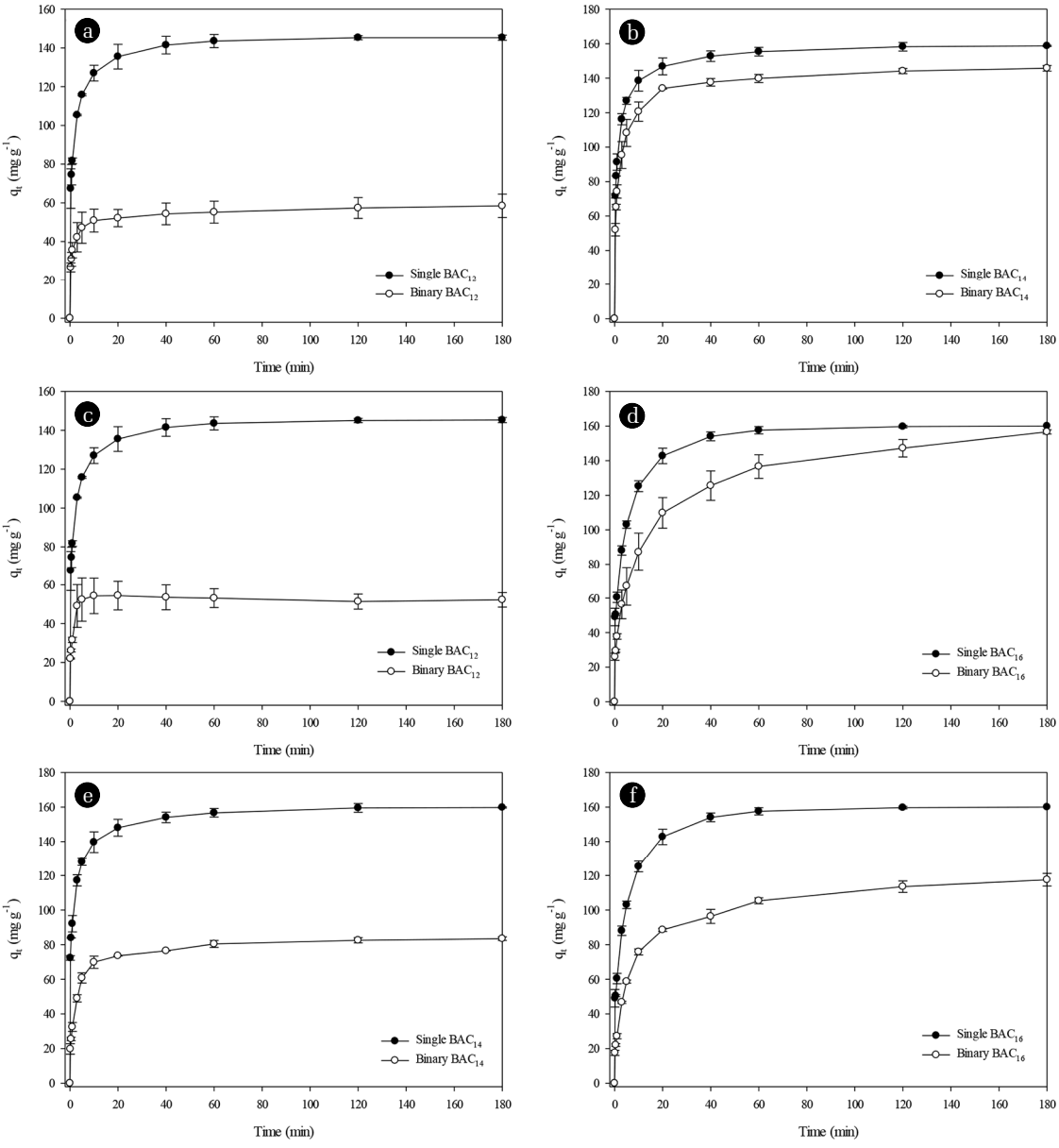


Fig. S1. Comparison of (a) BAC_{12}, (b) BAC_{14}, (c) BAC_{14}, (d) BAC_{16} and (e) BAC_{14}, (f) BAC_{16} adsorption capacities of single BACs and binary BACs ($[BAC]_0$ = 200 mg L^{-1}; temperature = 25°C; pH = 7.0 ± 0.1; contact time = 0−180 min; [PAC] = 1.2 g L^{-1}).

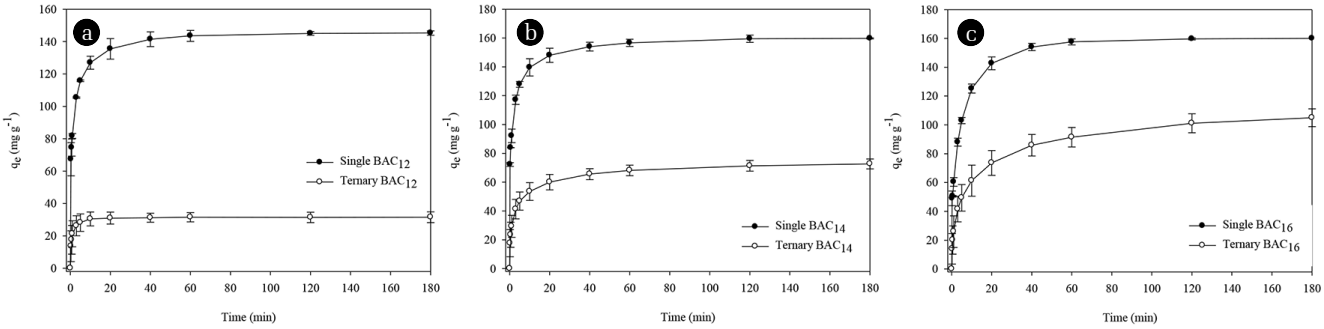


Fig. S2. Comparison of adsorption capacities between single BACs and ternary BACs (a) BAC_{12}, (b) BAC_{14} and (c) BAC_{16} ($[C_0]$ = 200 mg L^{-1}; temperature = 25°C; pH = 7.0 ± 0.1; contact time = 0–180 min; [PAC] = 1.2 g L^{-1})

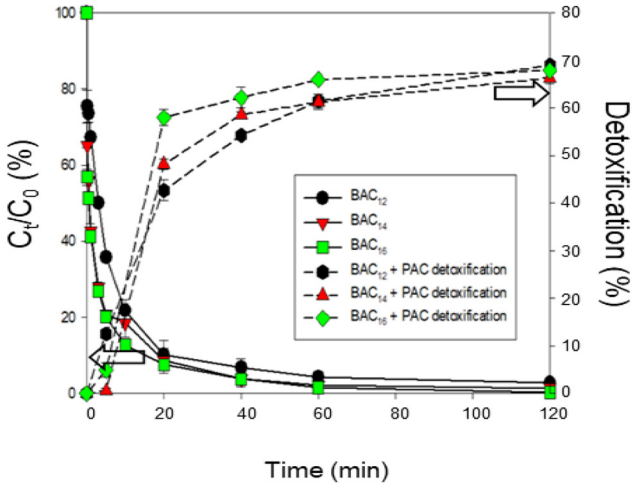


Fig. S3. Detoxification result of BACs in the presence of PAC using *V.fishceri* by Microtox test.