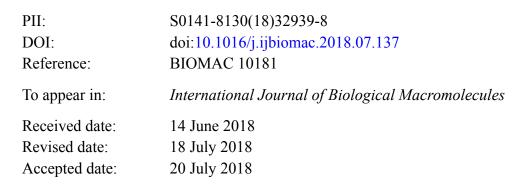
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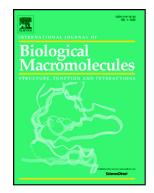
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ACCEPTED MANUSCRIPT

Construction of long-chain alkane degrading bacteria and its application in bioremediation of crude oil pollution

Long Meng^{a,b}, Mutai Bao^{a,b*}, Peiyan Sun^c

^a Key Laboratory of Marine Chemistry Theory and Technology, Ministry of Education,
Ocean University of China, Qingdao 266100, China
^b College of Chemistry & Chemical Engineering, Ocean University of China, Qingdao

266100, China

^c Key Laboratory of Marine Spill Oil Identification and Damage Assessment Technology, North China Sea Environmental Monitoring Center, State Oceanic Administration, Qingdao 266033, China

Abstract: In this study, a cloned *almA* gene was inserted into two plasmids PUC57 and pet-28a (+), and then transformed into *Escherichia coli* competent strains. The presence of *almA* was confirmed by PCR combined with restriction enzyme digestion. The results indicated two strains of PUC57/almA-*E.coli* and pet-28a (+)/almA-*E.coli* were all functioned on biodegradation long-chain alkanes, however, pet-28a (+)/almA-*E.coli* strain performed better and the speed of biodegradation was enhanced to about 12 mg L⁻¹ h⁻¹ when compared with PUC57/almA-*E.coli* strain. Furthermore, degradation degree of *n*-C32 was much higher than another long-chain alkanes for two engineered *E. coli* strains. Our results further suggested that exoenzyme was only detected in pet-28a (+)/almA-*E.coli* and followed a decreasing

^{*} Corresponding author: mtbao@ouc.edu.cn (M. Bao), E-mail: <u>mtbao@ouc.edu.cn</u>, Tel/Fax: +86-532-66782509. Postal address: Songling Road 238, Ocean University of China, Qingdao, China.

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