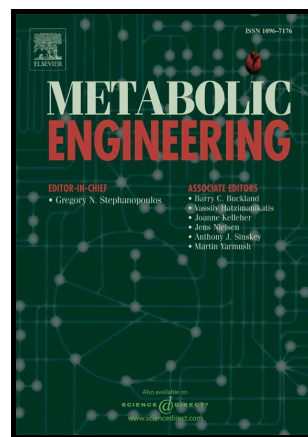


Heterologous biosynthesis and manipulation of alkanes in *Escherichia coli*

Ying-Xiu Cao, Wen-Hai Xiao, Jin-Lai Zhang, Ze-Xiong Xie, Ming-Zhu Ding, Ying-Jin Yuan



www.elsevier.com/locate/ymben

PII: S1096-7176(16)30043-X  
DOI: <http://dx.doi.org/10.1016/j.ymben.2016.06.002>  
Reference: YMBEN1121

To appear in: *Metabolic Engineering*

Received date: 9 February 2016  
Revised date: 12 May 2016  
Accepted date: 3 June 2016

Cite this article as: Ying-Xiu Cao, Wen-Hai Xiao, Jin-Lai Zhang, Ze-Xiong Xie, Ming-Zhu Ding and Ying-Jin Yuan, Heterologous biosynthesis and manipulation of alkanes in *Escherichia coli*, *Metabolic Engineering* <http://dx.doi.org/10.1016/j.ymben.2016.06.002>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Heterologous biosynthesis and manipulation of alkanes in *Escherichia coli***Ying-Xiu Cao<sup>a,b1</sup>, Wen-Hai Xiao<sup>a,b1</sup>, Jin-Lai Zhang<sup>a,b</sup>, Ze-Xiong Xie<sup>a,b</sup>, Ming-ZhuDing<sup>a,b</sup>, Ying-Jin Yuan<sup>a,b\*</sup>

<sup>a</sup>Key Laboratory of Systems Bioengineering (Ministry of Education), Tianjin University, Tianjin, 300072, PR China.

<sup>b</sup>SynBio Research Platform, Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), School of Chemical Engineering and Technology, Tianjin University, Tianjin, 300072, PR China.

caoyingxiu@163.com

yjyuan@tju.edu.cn

yjyuan@public.tpt.tj.cn

\*Corresponding author. Tel.: +86 139 2041 8397; fax: 86 22 27403888.

**Abstract**

Biosynthesis of alkanes in microbial foundries offers a sustainable and green supplement to traditional fossil fuels. The dynamic equilibrium of fatty aldehydes, key intermediates, played a critical role in microbial alkanes production, due to the poor catalytic capability of aldehyde deformylating oxygenase (ADO). In our study, exploration of competitive pathway together with multi-modular optimization was utilized to improve fatty aldehydes balance and consequently enhance alkanes formation in *Escherichia coli*. Endogenous fatty alcohol formation was supposed to

<sup>1</sup> These authors contributed equally to this work.

Download English Version:

<https://daneshyari.com/en/article/6494173>

Download Persian Version:

<https://daneshyari.com/article/6494173>

[Daneshyari.com](https://daneshyari.com)