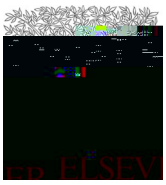
Bioresource Technology 378 (2023) 128991



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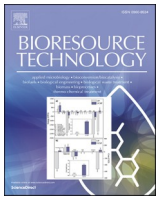

Corynebacterium glutamicum

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- *C glutamicum*
- *C glutamicum*
-
-

C glutamicum

Key ords
Corynebatcerium glutamicum

Corynebacterium glutamicum

C glutamicum

ldh pta ac cat

pyc ppc *cgl 2*

—

—

C glutamicum *C glutamicum*

mail address

Available online 31 March 2023

1. Introduction

C glutamicum

C glutamicum

naerobio
spirillum succinogenes *ctinobacillus succinogenes*
Mannheimia succiniciproducens

ibrio natriegens *scherichia*
coli *Corynebacterium glutamicum*
Saccharomyces ccerevisiae *arro ia lipolytica*

C glutamicum *Cgl 2*

lipolytica

coli

succinogenes

Corynebacterium glutamicum

, *C glutamicum*

C glutamicum

C glutamicum

C glutamicum

C glutamicum
yl B

α

C glutamicum

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2. Materials and methods

2 Culture media and conditions

C glutamicum

α

C glutamicum *coli*

C glutamicum

C glutamicum

mnlg,gnoyycobmob

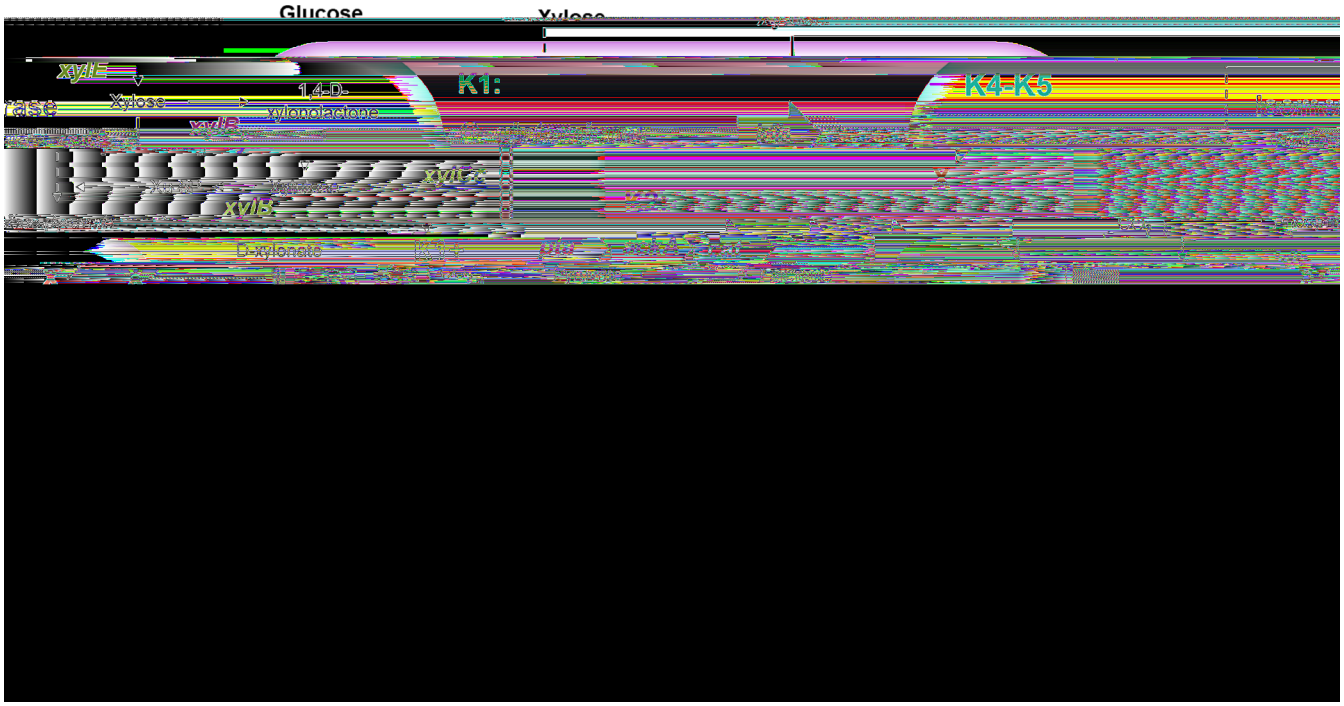

Fig. 1.

Table 1

α	*coli*
	C glutamicum
	*C glutamicum*Δ*ldh*
	Δ*pta ac* Δ*cat*
	ppc pyc cgl 2

coli C glutamicum
coli C glutamicum

Δ*ldh*
ldh

Δ*pta ac*
pta ac

Δ*cat*
cat

ppc pyc *ppc*
pyc
ppc pyc *ppc*
cgl 2 *pyc* *cgl 2*
yl
ylB *yl*
yl
ylB *yl* *yl c* *ylBc* *yl c* *ylCc*

2 nalytical methods

×

2 eedstoc and C S pretreatment

2 n ymatic hydrolysis and separate hydrolysis fermentation

=

2 Chemical composition analysis

×

°

pta ac *ca*

2 Morphology analysis and thermogravimetric analysis

C glutamicum

pyc *ppc*
C glutamicum

° °

cgl 2 ,

3. Results and discussion

pyc *ppc*

ngineering a succinate high producing C glutamicum *C glutamicum*

C glutamicum

ldh

pta ac

cat
C glutamicum Δldh *C glutamicum Δldh*
Δpta ac *Δcat*
+

ldh

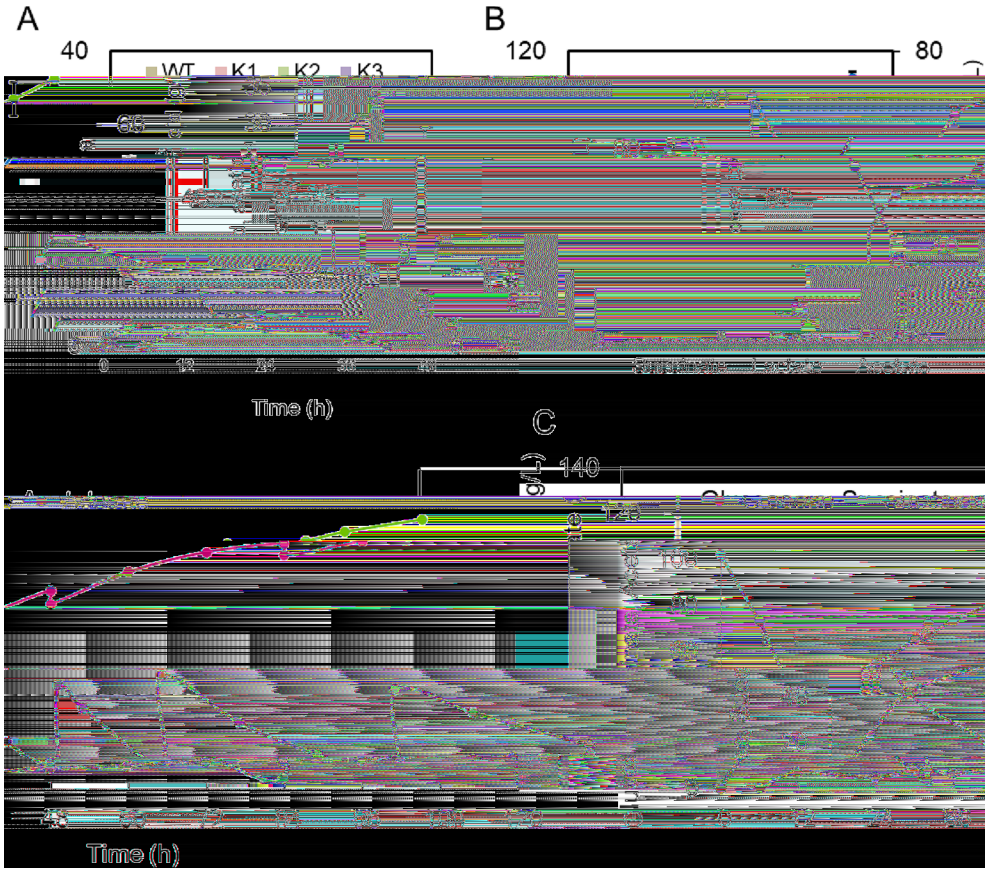

Fig. 2.

C glutamicum

•5(/0 1 5 17100 T1 135 19486 2421 23 [48 TJ 1 tm 0.52

2 ngineering a ylose utili ing C glutamicum

C glutamicum

Caulobacter crescentus

α

ylBc

yl c

ylCc *ylDc* α

yl c

ylBc yl c yl c ylCc *C glutamicum* ,

coli *yl*

ylB *yl*

coli

α *ylBc yl c yl c ylCc*

yl *ylB yl*

ylBc yl c yl c ylCc *C glutamicum*

/ TJ 1 0 0 1 3.5000 TJ 1 0 0 1 3.540 1 11.5659 -11.1391 Tm[3(011 TJ 1 0 40 TJ 1 0000 0 1 17.8041 -2.6247 Tm [0.102031

Compositional and morphological changes

Steam consumption and blac li uid generation

2 ptimi ation of C S pretreatment

f cient succinate production from C S pretreated corn stover

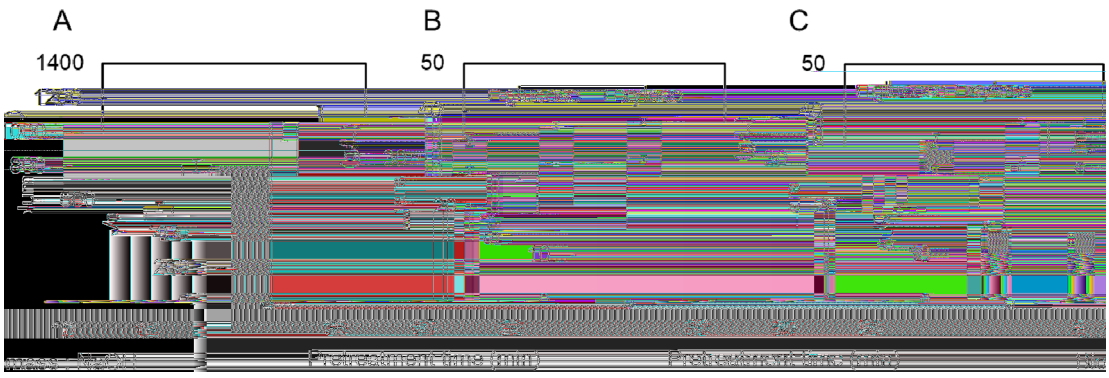

Fig. 4.

C glutamicum

C glutamicum

CRediT authorship contribution statement

Kai Li: – **Cheng Li:** – & **Xin-Qing Zhao:** – & **Chen-Guang Liu:** – & **Feng-Wu Bai:** – &

Declaration of Competing Interest

Data availability

Acknowledgements

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Appendix A. Supplementary data

References