Metabolic Engineering 42 (2017) 25–32

journal homepage: www.elsevier.com/locate/meteng

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Ke ord :

Saccharom ce cere i iae

ffi k_{cq} K_m

in i ro

1. Introduction

S. cere i iae

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S. cere i iae

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E-mail addre :

Available online 04 May 2017

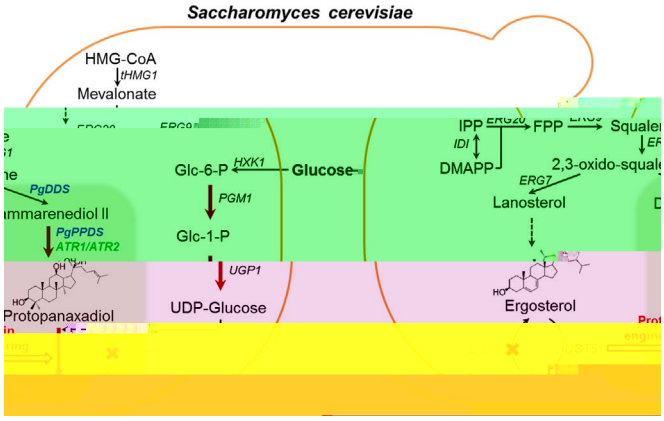

Fig. 1.

P. gin eng *A. ę haliana*

in ę ro
in i o

S. cere i iae

S. cere i iae

de no o

2. Materials and methods

2.1. Chemical , ę rain and c l ę re condi ę ion

β

E. coli *DE3*

fl

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g

2.2. Prod ç ion and p rifiç ion of gl co l ę ran fera e UGT51

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S. cere i iae
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NdeI *XhoI* fi

E. coli

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ff ff

2.3. Gl co l ę ran fera e a a

µ ff
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µ ff
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2.4. Chemical anal i

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d_5

2.5. Si e-direc ed m agene i and i erq i e q rq ion m agene i

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β

DpnI

E. coli *DE3*

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μ ff

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μ

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2.6. Me aboli e anal i

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3. Results

3.1. UGT51 from S. cere i iae i a promi c o gl co l ran fera e for Rh2 n he i

E cherichia coli

DE3 fi *in i ro*

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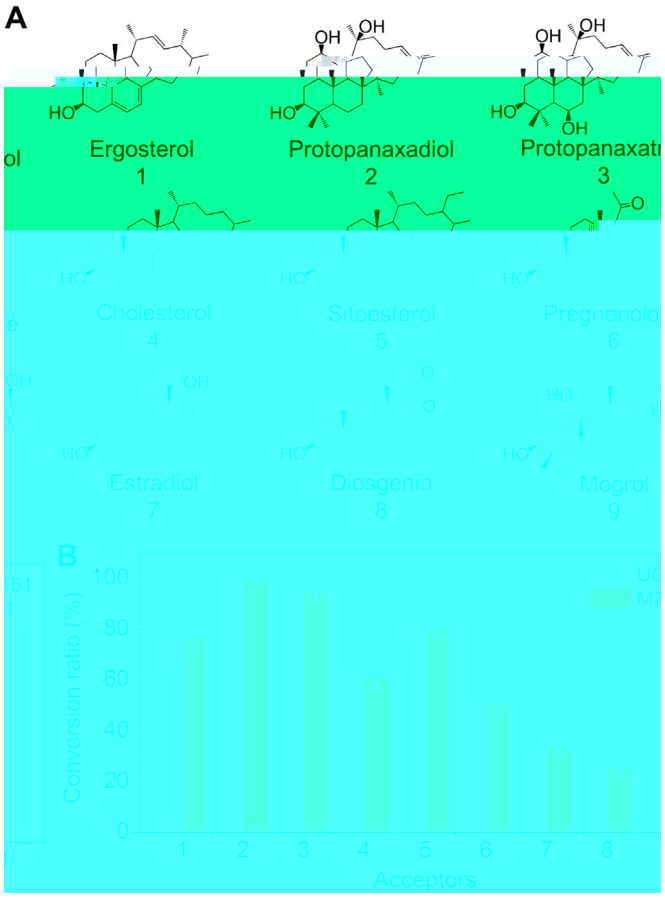

Fig. 2. fi

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3.2. Semi-rq ional de ign of UGT51 o ard an efficien Rh2 n ha e

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β α β

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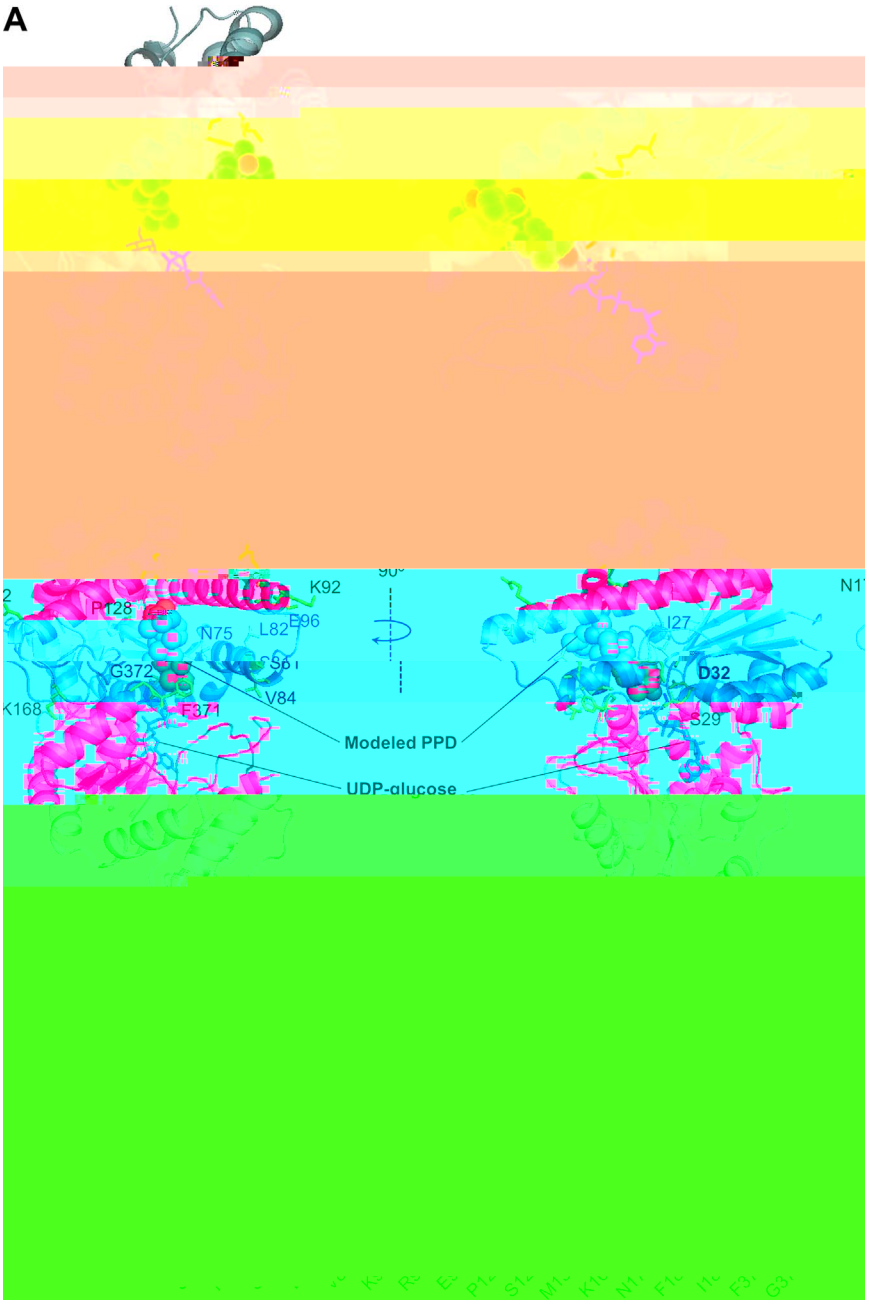

Fig. 3.

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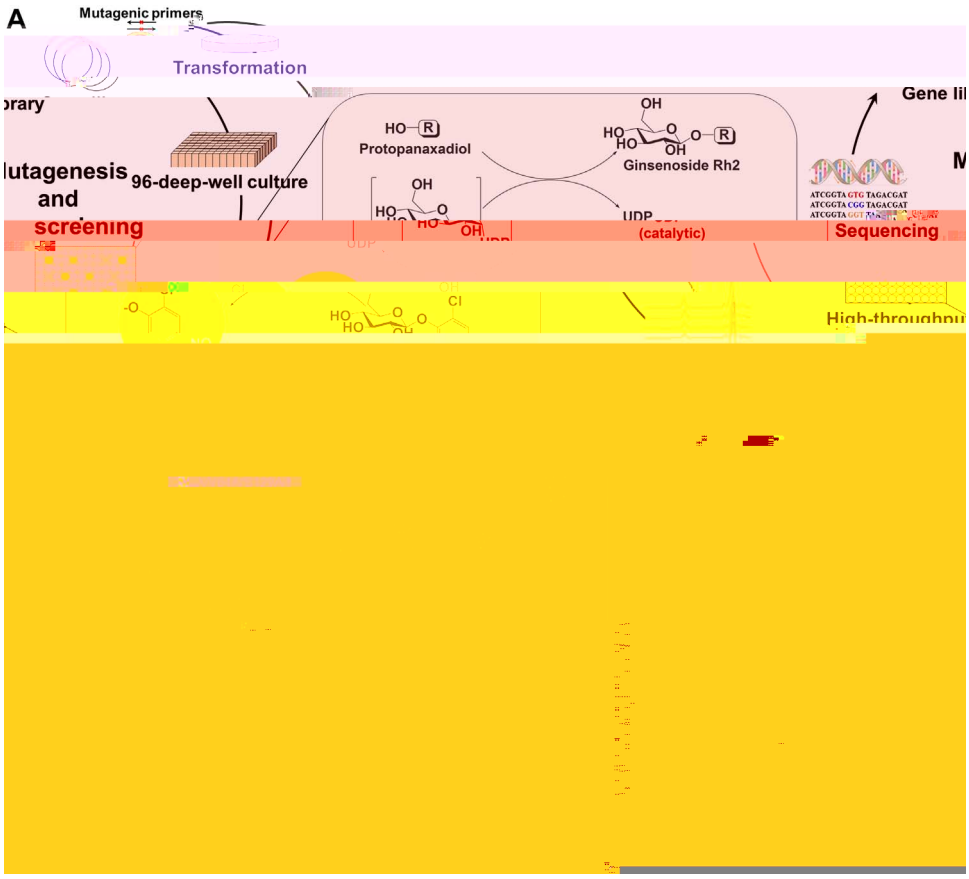

Fig. 4. ffi *A*

B

fi

Table 1
Kinetic parameters of UGT51 and its mutants

Enzyme	Mutations	K_m (mM)	k_{cat} (s^{-1})	k_{cat}/K_m ($mM^{-1}·s^{-1}$)	Fold change over WT
	–	–	–		
		–	–		
		–	–		

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ffi *in ię ro*

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K_m $k_{cą}/K_m$

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fi

ffi Δ fi

k_{cat}/K_m fi

Δ

3.3. Production of Rh2 in S. cerevisiae

S. cerevisiae

TDH3 P_{TDH3}-*M7-1*-T_{CYC1} *HO*

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in vivo

fi ffi

ffi

fi *S. cerevisiae*

Cryptococcus neoformans

β

β

in vitro

EGH1

Δ

fi

Δ

Δ

HXK1, PGM1 *UGP1*

PGM1

PGM1 *UGP1*

PGK1 *HXT7*

Δ

Δ

PgPPDS

ffi

ffi ffi

PPDS-75, ATR2 ffi

δ

Δ Δ

Δ

4. Discussion

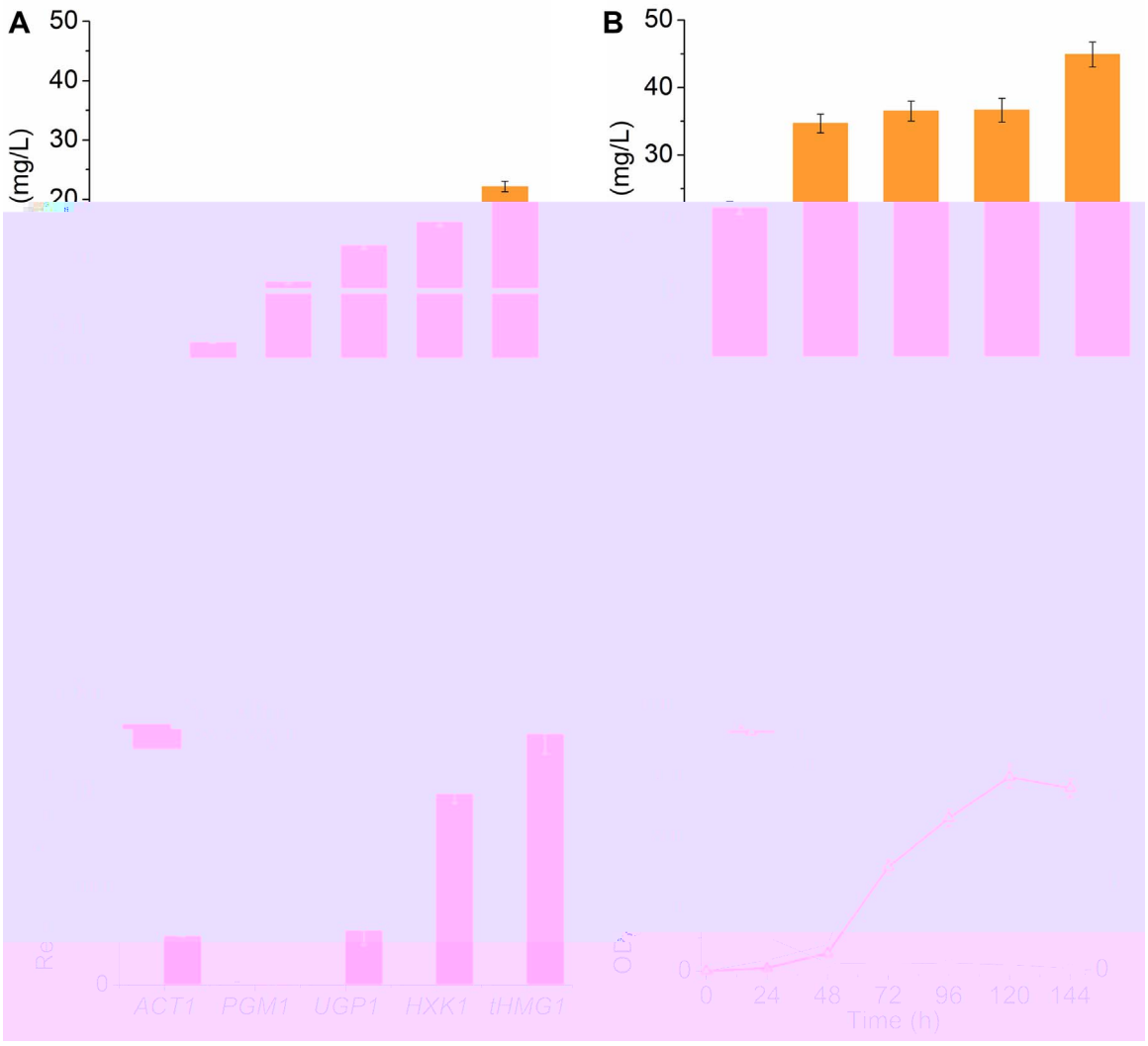

Fig. 5. *S. cere i iae* *A* *B* fl *PPDS-75* *ATR2* *PGM1* *UGP1* *C* fi *ACT1* *ACT1* *HXK1* *t* *HMG1* *D* Δ *A* *D*

Table 2

Strains	DCW	DDII ( )	PPD ( )	Rh2 ( )
Δ				
Δ				
Δ				
Δ				
Δ				

EGH1

ffi

ffi *in i o*

PGM1 *UGP1*

S. cere i iae

S. cere i iae

Acknowledgements

Appendix A. Supporting information

References