$ \begin{array}{c} 10^{3} \\ 10^{2} \\ \hline 10^{1} \\ \hline tes \\ \hline 10^{-1} \\ 10^{-2} \\ \hline 10^{-3} \\ 0. $	argA 0 0.1 0.2 0.3 0.4 0.5 0.6 0.	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	aroA 0.1 0.2 0.3 0.4 0.5 0.6	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	aroB 0.1 0.2 0.3 0.4 0.5 0.6 0.7
	growth rate [h ⁻¹] aroC 0 0.1 0.2 0.3 0.4 0.5 0.6 0.	growth rate $[h^{-1}]$ 10^{3} 10^{2} 10^{-1} 10^{-2} 10^{-3} 0.0 0.1 0.2 0.3 0.4 0.5	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	growth rate [h ⁻¹] bioA 0.1 0.2 0.3 0.4 0.5 0.6		growth rate [h ⁻¹] bioB 0.1 0.2 0.3 0.4 0.5 0.6 0.7
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ & \\ \frac{\text{teo}}{x} \\ & \\ 10^{-1} \\ 10^{-2} \\ 10^{-3} \\ 0 \end{array} $			$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	growth rate [h ⁻¹] cmk 0.1 0.2 0.3 0.4 0.5 0.6	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	growth rate [h ⁻¹] coaA 0.1 0.2 0.3 0.4 0.5 0.6 0.7
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ & \\ \frac{d}{d} \\ & \\ 10^{1} \\ & \\ 10^{2} \\ & \\ 10^{-1} \\ 10^{-2} \\ & \\ 10^{-3} \\ 0. \end{array} $		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	growth rate [h ⁻¹] cysC 0.1 0.2 0.3 0.4 0.5 0.6	$ \begin{array}{ccccccccccccccccccccccccccccccccccc$	growth rate [h ⁻¹] cysE 0.1 0.2 0.3 0.4 0.5 0.6 0.7
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ \hline 10^{2} \\ \hline 10^{1} \\ \hline 10^{2} \\ 10^{-1} \\ 10^{-2} \\ \hline 10^{-3} \\ 0. $		10^{-2} 10^{-3}	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	growth rate [h ⁻¹] dapB 0.1 0.2 0.3 0.4 0.5 0.6	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	growth rate [h ⁻¹] dapD 0.1 0.2 0.3 0.4 0.5 0.6 0.7
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ &$			$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	growth rate $[h^{-1}]$ dxs 0.1 0.2 0.3 0.4 0.5 0.6	10^{-2}	growth rate [h ⁻¹] eno 0.1 0.2 0.3 0.4 0.5 0.6 0.7
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ &$	growth rate $[h^{-1}]$ fabG $\begin{bmatrix} & & & & & & & & & & & & & & & & & & $	10 ⁻¹ 10 ⁻² 10 ⁻³	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	growth rate $[h^{-1}]$ folD 0.1 0.2 0.3 0.4 0.5 0.6 growth rate $[h^{-1}]$	$ \begin{array}{c c} 10^{3} \\ 10^{2} \\ 10^{1} \\ 10^{2} \\ 10^{1} \\ 10^{-2} \\ 10^{-3} \\ 0.7 \\ 0.0 \end{array} $	growth rate $[h^{-1}]$ folD 0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate $[h^{-1}]$
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ \downarrow^{\frac{to}{2}} \\ 10^{0} \\ 10^{-1} \\ 10^{-2} \\ 10^{-3} \\ 0. \end{array} $	folE	10 ³ 10 ² 10 ¹ 10 ² 10 ⁻¹ 10 ⁻² 10 ⁻³	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	folp folp 0.1 0.2 0.3 0.4 0.5 0.6 growth rate $[h^{-1}]$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	gapA O.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h-1]
$ \begin{array}{c c} 10^{3} \\ 10^{2} \\ 10^{1} \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ &$	gdhA	10 ³ glmM 10 ² 10 ⁰ 10 ⁰ 10 ⁻¹ 10 ⁻² 10 ⁻³	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	glmS 0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹]	$ \begin{array}{c c} 10^{3} \\ 10^{2} \\ 10^{1} \\ 10^{2} \\ 10^{1} \\ 10^{-2} \\ 10^{-3} \\ 0.7 \\ 0.0 \end{array} $	glmU glmU 0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ \frac{\cos^{2} y}{y^{2}} \\ 10^{0} \\ 10^{-1} \\ 10^{-2} \\ 10^{-3} \\ 0. \end{array} $	glmU 0 0.1 0.2 0.3 0.4 0.5 0.6 0.	10 ³ 10 ² 10 ¹ 10 ² 10 ⁻¹ 10 ⁻² 10 ⁻³ 0.0 0.1 0.2 0.3 0.4 0.5	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	gltX 0.1 0.2 0.3 0.4 0.5 0.6	$ \begin{array}{c c} & 10^{3} \\ & 10^{2} \\ & 10^{1} \\ & 10^{2} \\ & 10^{-1} \\ & 10^{-2} \\ & 10^{-3} \\ & 0.7 \\ & 0.0 \end{array} $	glyA 0.1 0.2 0.3 0.4 0.5 0.6 0.7
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ 10^{2} \\ 10^{3} \\ 10^{1} \\ 10^{2} \\ 10^{-3} \\ 0 \end{array} $	growth rate $[h^{-1}]$ gmk 0 0.1 0.2 0.3 0.4 0.5 0.6 0. growth rate $[h^{-1}]$	growth rate $[h^{-1}]$ gnd 10^{3} 10^{2} 10^{4} 10^{2} 10^{-1} 10^{-3} 0.0 0.1 0.2 0.3 0.4 0.5 growth rate $[h^{-1}]$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	growth rate $[h^{-1}]$ gpsA $0.1 0.2 0.3 0.4 0.5 0.6$ growth rate $[h^{-1}]$	$ \begin{array}{c c} 10^{3} \\ 10^{2} \\ 10^{1} \\ 10^{2} \\ 10^{1} \\ 10^{-3} \\ 0.7 \\ 0.0 \end{array} $	growth rate $[h^{-1}]$ guaA 0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate $[h^{-1}]$
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \end{array} $ $ \begin{array}{c} 10^{2} \\ 10^{1} \end{array} $ $ \begin{array}{c} 10^{2} \\ 10^{-1} \\ 10^{-2} \end{array} $ $ \begin{array}{c} 10^{-3} \\ 0 \end{array} $	guaB 0 0.1 0.2 0.3 0.4 0.5 0.6 0. growth rate [h ⁻¹]	10 ³ hemA 10 ² 10 ¹ 10 ⁰ 8	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	hemB 0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹]	$ \begin{array}{c c} 10^{3} \\ 10^{2} \\ 10^{1} \\ 10^{2} \\ 10^{1} \\ 10^{-2} \\ 10^{-3} \\ 0.7 \\ 0.0 \end{array} $	hemC 0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ &$	hemG 0 0.1 0.2 0.3 0.4 0.5 0.6 0. growth rate [h ⁻¹]	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	hisA 0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹]	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	hisD 0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
	icd	ilvD 10^{3} 10^{2} 10^{1} 10^{-2} 10^{-3} $0.0 0.1 0.2 0.3 0.4 0.5$ $0.0 0.1 0.2 0.3 0.4 0.5$ $0.0 0.1 0.2 0.3 0.4 0.5$ $0.0 0.1 0.2 0.3 0.4 0.5$ $0.0 0.1 0.2 0.3 0.4 0.5$ $0.0 0.1 0.2 0.3 0.4 0.5$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ispB 0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] kdsB	$ \begin{array}{ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ 10^{1} \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ &$		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹]	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ \hline 10^{1} \\ \hline 10^{2} \\ \hline 10^{1} \\ \hline 10^{2} \\ \hline 10^{2} \\ \hline 10^{-1} \\ 10^{-2} \\ \hline 10^{-3} \\ 0. $		10^{2} 10^{1} 10^{2} 10^{-1} 10^{-2} 10^{-3} 0.0 0.1 0.2 0.3 0.4 0.5 growth rate $[h^{-1}]$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] mdh	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹] metA
		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$0.1 0.2 0.3 0.4 0.5 0.6$ growth rate $[h^{-1}]$ metF	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$0.1 0.2 0.3 0.4 0.5 0.6 0.7$ growth rate $[h^{-1}]$ metK
$ \begin{array}{c} 10^{3} \\ 10^{2} \\ \hline 10^{1} \\ \hline 10^{2} \\ \hline 10^{1} \\ \hline 10^{2} \\ \hline 10^{-1} \\ \hline 10^{-2} \\ \hline 10^{-3} \\ \hline 0. $		10 ² 10 ¹ 10 ²	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Ø 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$0.1 0.2 0.3 0.4 0.5 0.6 0.7$ growth rate $[h^{-1}]$
	$0 0.1 0.2 0.3 0.4 0.5 0.6 0.$ growth rate $[h^{-1}]$ murD	10 ² 10 ¹ 10 ² 10 ² 10 ² 10 ⁻¹ 10 ⁻² 10 ⁻³	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] murF	10 ²	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹] murG
	$0 0.1 0.2 0.3 0.4 0.5 0.6 0.$ growth rate $[h^{-1}]$ murl	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] nadC	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹] nadE
	0 0.1 0.2 0.3 0.4 0.5 0.6 0. growth rate [h ⁻¹] panB	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$0.1 0.2 0.3 0.4 0.5 0.6$ growth rate $[h^{-1}]$ panD	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
	0 0.1 0.2 0.3 0.4 0.5 0.6 0. growth rate [h ⁻¹]	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹]	$ \begin{array}{ccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹] pheA
	$0 0.1 0.2 0.3 0.4 0.5 0.6 0.$ growth rate $[h^{-1}]$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹]	$ \begin{array}{c cccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹] proB
	$0 0.1 0.2 0.3 0.4 0.5 0.6 0.$ growth rate $[h^{-1}]$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] pssA	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0 0.1 0.2 0.3 0.4 0.5 0.6 0. growth rate [h ⁻¹] purB	10 ¹ 10 ² 10 ⁻² 10 ⁻³	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] purD	101	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹] purE
$ \begin{array}{c} 10^{1} \\ & 10^{0} \\ & 10^{-1} \\ & 10^{-2} \\ & 10^{-3} \\ & 0. \end{array} $	$0 0.1 0.2 0.3 0.4 0.5 0.6 0.$ growth rate $[h^{-1}]$	10^{-1} 10^{-2} 10^{-3}	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] purL	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
$ \begin{array}{c} 10^{1} \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ $	0 0.1 0.2 0.3 0.4 0.5 0.6 0. $0 0.1 0.2 0.3 0.4 0.5 0.6 0.$	growth rate $[h^{-1}]$ $pyrC$ 10^{2}	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] pyrD	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹] pyrE
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$0 0.1 0.2 0.3 0.4 0.5 0.6 0.$ growth rate $[h^{-1}]$ pyrF	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] ribA	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0 0.1 0.2 0.3 0.4 0.5 0.6 0. growth rate $[h^{-1}]$	growth rate $[h^{-1}]$ ribD 10^{3}	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹]	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹] serA
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	growth rate $[h^{-1}]$ serC	10^{-2} 10^{-3}	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹] thiD	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$0 0.1 0.2 0.3 0.4 0.5 0.6 0.$ growth rate $[h^{-1}]$ thrB	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$0.1 0.2 0.3 0.4 0.5 0.6$ growth rate $[h^{-1}]$ tmk	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
$ \begin{array}{c} $	0 0.1 0.2 0.3 0.4 0.5 0.6 0. growth rate $[h^{-1}]$	growth rate $[h^{-1}]$ trpC 10^{2}	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 growth rate [h ⁻¹]	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹] ubiC
$ \begin{array}{c} 10^{1} \\ \hline $	0 0.1 0.2 0.3 0.4 0.5 0.6 0. $0 0.1 0.2 0.3 0.4 0.5 0.6 0.$ $0 0.1 0.2 0.3 0.4 0.5 0.6 0.$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$0.1 0.2 0.3 0.4 0.5 0.6$ growth rate $[h^{-1}]$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1 0.2 0.3 0.4 0.5 0.6 0.7 growth rate [h ⁻¹]
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$0 0.1 0.2 0.3 0.4 0.5 0.6 0.$ growth rate $[h^{-1}]$	7				