

**Table S7. Genetic parameters for the *rrn* inactivation strains at 2 doub/h, 37°C.** Strain names are indicated in bold. A  $\Delta n$  strain indicates that  $n$  *rrn* operons were inactivated. The table for the  $\Delta 0$  (i.e. wild-type) strain is simply Table S5. Changes with respect to the previous strain are denoted in gray. See S1.3 in Text S1 for further details.

Gene class		Units	r-protein	bulk	<i>rrn</i>
<i>m</i>	Map location	MU (min)	see Table S5		C(84.5), D(72.1), G(56.1), H(5.1), B(89.8), E(90.5), A(86.5)
$V_i^{\max}$	Maximum transcription initiation rate	ini/min	33	2.01	110
$U_i^{\max}$	Maximum translation initiation rate	ini/min	-	80	-
$K_{m,i}$	Promoter-RNAP holoenzyme binding affinity	molec/cell	405	405	708
$L_{m,i}$	RBS-30S ribosome subunit binding affinity	molec/cell	-	13261	-
$T_{1/2,i}^{\text{fun}}$	mRNA half-life	min	-	6.8	-
$L_i$ transcr.	Gene class length transcribed	base pairs	21252	1000	6623
$L_i$ transl.	Gene class length translated	base pairs	21252	1000	0
$c_p$	Peptide chain elongation rate	aa/sec	20	20	-
$c_i$	RNA chain elongation rate	nuc/sec	52	1.87	85

$\Delta 0 = \Delta \text{TX11}$

Gene class		<i>rrn</i>	Load 1
<i>m</i>	<b><math>\Delta 1 = \Delta \text{Ac} = \text{TA566}</math></b>	C(84.5), D(72.1), G(56.1), H(5.1), B(89.8), E(90.5)	A(86.5)
$V_i^{\max}$		110	110
$U_i^{\max}$		-	80
$K_{m,i}$		708	708
$L_{m,i}$		-	13261
$T_{1/2,i}^{\text{fun}}$		-	1.75
$L_i$ transcr.		6623	2147
$L_i$ transl.		0	657
$c_p$		-	20
$c_i$		85	85

Gene class	<b><math>\Delta 2 = \Delta EAc = TA567</math></b>	<i>rrn</i>	Load 1	Load 2	
<i>m</i>		C(84.5), D(72.1), G(56.1), H(5.1), B(89.8)	A(86.5)	E(90.5)	
$V_i^{\max}$		110	110	110	
$U_i^{\max}$		-	80	-	
$K_{m,i}$		708	708	708	
$L_{m,i}$		-	13261	-	
$T_{1/2,i}^{fun}$		-	1.75	-	
$L_i$ transcr.		6623	2147	0	
$L_i$ transl.		0	657	0	
$c_p$		-	20	-	
$c_i$		85	85	85	

Gene class	<b><math>\Delta 3 = \Delta EBAc = TA568</math></b>	<i>rrn</i>	Load 1	Load 2	Load 3
<i>m</i>		C(84.5), D(72.1), G(56.1), H(5.1)	A(86.5)	E(90.5)	B(89.8)
$V_i^{\max}$		110	110	110	110
$U_i^{\max}$		-	80	-	-
$K_{m,i}$		708	708	708	708
$L_{m,i}$		-	13261	-	-
$T_{1/2,i}^{fun}$		-	1.75	-	-
$L_i$ transcr.		6623	2147	0	2406
$L_i$ transl.		0	657	0	0
$c_p$		-	20	-	-
$c_i$		85	85	85	85

Gene class	<b><math>\Delta 4 = \Delta EBHAc = TA430</math></b>	<i>rrn</i>	Load 1	Load 2	Load 3	Load 4
<i>m</i>		C(84.5), D(72.1), G(56.1)	A(86.5)	E(90.5)	B(89.8)	H(5.1)
$V_i^{\max}$		110	110	110	110	110
$U_i^{\max}$		-	80	-	-	-
$K_{m,i}$		708	708	708	708	708
$L_{m,i}$		-	13261	-	-	-
$T_{1/2,i}^{fun}$		-	1.75	-	-	-
$L_i$ transcr.		6623	2147	0	2406	1538
$L_i$ transl.		0	657	0	0	0
$c_p$		-	20	-	-	-
$c_i$		85	85	85	85	85

Gene class	<b><math>\Delta 5 = \Delta EBHGzAc = TA476</math></b>	<i>rrn</i>	Load 1	Load 2	Load 3	Load 4	Load 5	
<i>m</i>		C(84.5), D(72.1)	A(86.5)	E(90.5)	B(89.8)	H(5.1)	G(56.1)	
$V_i^{\max}$		110	110	110	110	110	110	
$U_i^{\max}$		-	80	-	-	-	80	
$K_{m,i}$		708	708	708	708	708	708	
$L_{m,i}$		-	13261	-	-	-	13393	
$T_{1/2,i}^{fun}$		-	1.75	-	-	-	1.5	
$L_i$ transcr.		6623	2147	0	2406	1538	6215	
$L_i$ transl.		0	657	0	0	0	3075	
$c_p$		-	20	-	-	-	20	
$c_i$		85	85	85	85	85	85	

Gene class	<b><math>\Delta 6 = \Delta EBHGzADc = TA516</math></b>	<i>rrn</i>	Load 1	Load 2	Load 3	Load 4	Load 5	Load 6	
<i>m</i>		C(84.5)	A(86.5)	E(90.5)	B(89.8)	H(5.1)	G(56.1)	D(72.1)	
$V_i^{\max}$		110	110	110	110	110	110	110	
$U_i^{\max}$		-	-	-	-	-	80	80	
$K_{m,i}$		708	708	708	708	708	708	708	
$L_{m,i}$		-	-	-	-	-	13393	13261	
$T_{1/2,i}^{fun}$		-	-	-	-	-	1.5	1.75	
$L_i$ transcr.		6623	1503	0	2406	1538	6215	2147	
$L_i$ transl.		0	0	0	0	0	3075	657	
$c_p$		-	-	-	-	-	20	20	
$c_i$		85	85	85	85	85	85	85	