mutual info [bits] - 500000 - 000000	Glucose -110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS	0.002 - 0.001 - 0.000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
0.003 - 0.002 - 0.000 - 0.000 -	Xylose -110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40	0.0020 - 0.0015 - 0.00010 - 0.0005 - 0.0000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40
mutral info [bits] - 800.0 - 200.0 - 0.000 -	Arabinose -110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40	position relative to TSS 30,008 -
mutnal info [bits] - 0.000.0 - 0.000.0 - 0.000.0	position relative to TSS Galactose	position relative to TSS Signature 0.0008 - 0.0006 - 0.0004 - 0.0002 - 0.00000 - 0.00000
mntral iulo [pits] 0.0020 - 0.0015 - 0.0005 - 0.0000 -	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Sodium Salicytate	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS 30
mutral info [bits] - 0.0000 - 0.0000 -	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Ethanol (2.5 %)	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS 30
mutual info [bits] - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Stationary Phase (1d)	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
mutral info [bits] 0.0000 - 0.0004 - 0.0000 - 0.0000 -	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Stationary Phase (3d)	2 0.0000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS [5] 0.0010 - 0.0005 - 0.0000 -
□ 0.0000 - 0.003 - 0.000 - 0.	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Cold Shock (1h at 10C)	2 0.0000
mutual info [bits] - 0.0000 0.0000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Ampicillin	E 0.000
m 0.0000 - 0.00010 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.0000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.0000000 - 0.0000000 - 0.00000000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Heatshock	0.0000
m 0.0000 - 0.0015 - 0.00000 - 0.000000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.0000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.0000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS H2O2 (0.1mM 30min)	110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS 10 0.0020 - 0.0015 - 0.0005 - 0.0005 - 0.0000 - 0.
0.0005 - 0.0000 - 0.0000 - 0.0006 - 0.0006 - 0.0004 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.00000 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS LB	0.0005 - 0.0000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
0.0002 - 0.0000 - 0.0003 - 0.0002 - 0.0000 - 0.0001 - 0.0001 - 0.0000 - 0.0001 - 0.0000 - 0.0	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Nirtogen starvation	0.0000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
mutual info [bits] mutual 0.000.0 - 0.00000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Magnesium starvation	0.0005110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS 0.0015 - 0.0005 - 0.0005 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000
mutual info [bits] mutual 0.0000 0.0000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Sulphur starvation	0.0000
	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Sodium Salicytate (induction)	0.0002110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
- 100.00 mutual info [bits] - 200.00 mutual info [bits] -	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Ampicillin (induction)	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
o [bits] - 0.0015 - 0.0010 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.000000 - 0.000000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.0000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.0000000 - 0.0000000 - 0.00000000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Ethanol (induction)	0.0015 - 0.0015 - 0.0005 - 0.0000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
[pits] mntnal info [pits] 0.0006 - 0.0004 - 0.0002 - 0.0000 -	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Glutamic acid (pH 2.5)	0.0002 - 0.0000 110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
bits] mutual info [bits] - 1000.0 - 200	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Leucine (10mM)	ST 0.006 - 0.005 - 0.004 - 0.003 - 0.002 - 0.0001 - 0.000 - 0.0001 - 0.000 - 0.0001 - 0.000 - 0.0001 - 0
pits] - 0.0020 - 0.0015 - 0.0010 - 0.00000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.00000 - 0.000000 - 0.000000 - 0.000000 - 0.000000 - 0.00000000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS 2pH (HCl)	[3] 0.0020 - 0.0015 - 0.0005 - 0.0000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
0.003 - 0.002 - 0.001 - 0.000 -	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Medium Cold shock 19C	0.0015 - 0.0005 - 0.0000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
ts] mutual info [bits] - 000.0 - 0000.0	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS 2,2-Dipyridyl	0.005 110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
- 200.0 mutnal info [bits]	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Phenazine Methosulfate	(S) 0.0006 - 0.0005 - 0.0004 - 0.0003 - 0.0001 - 0.00001 - 0.00001 - 0.0000 - 0.0001 - 0.0000 - 0.0001
mntral info [bits] 0.0006 - 0.0000 - 0.0000 - 0.0000 - 0.0000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS	0.0003 - 0.0002 - 0.0001 - 0.0000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
mutual info [bits] - 0.0000 - 0.0000 -	H2O2 (2.5mM, 10min) -110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40	0.0006 - 0.0005 - 0.0004 - 0.0003 - 0.0002 - 0.0001 - 0.0000 - 0.0
mutual info [bits] - 0.000 - 0.000	Gentamicin -110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40	position relative to TSS 50
0.004 - 0.003 - 0.002 - 0.001 - 0.000 -	position relative to TSS Copper Sulfate (500μM) -110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40	position relative to TSS [5] 0.0010 - 0.0005 - 0.0000 -
mntnal info [bits] - 0.00015 - 0.00005 - 0.00000 -	HOCI (4mM) -110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40	position relative to TSS State 0.0010 - 0.0005 - 0.0005 - 0.0000 - 0.0
mutual info [bits] - 00000 - 00000	spermidine	position relative to TSS Single
mutual info [bits] - 00000 - 00000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Serine Hydroxamate	position relative to TSS 1
mutual info [bits] - 0.000 - 0.000 -	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Anaerobic	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS 31
- 0.000 - 0.0015 - 0.00000 - 0.000000 - 0.000000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.0000000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Low Osmolarity	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS [\$\frac{1}{10}\$ 0.0015 - 0.0005 - 0.0000 -
mutral info [bits] mutral info [bits] 0.0000 - 0.0000 -	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS LB + 0.75M NaCl	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
m 0.0000 - 0.0015 - 0.00000 - 0.000000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000 - 0.00000000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Low Phosphate	0.0000
0.0000 - 0.000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Copper Sulfate (2mM)	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
0.000 - 0.003 - 0.002 - 0.001 - 0.000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Acetate	0.0005 - 0.0000110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Still 0.0015 - 0.0005 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.00000 - 0.0000
0.001 - 0.000 - 0.0005 - 0.0005 - 0.0000 -	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Nitrate	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS Anaerobic + Nitrate	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS
mutral info [bits] 0.006 - 0.004 - 0.003 - 0.0001 - 0.000	-110-100-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 position relative to TSS	(31) 0.004 - 0.003 - 0.002 - 0.0001 - 0.0001 - 0.0001 - 0.0000 - 0.0001 - 0