Table S1 Primer sequences

Primer name	Sequence
For promoter deletion analysis	
tynA5-1	5'-TAATCGGTGAATGAAGGGCA
tynA5-2	5'-GCATCCACTGTATGAAAAGC
tynA5-3	5'-TGTATGAAAAGCTGGCACAC
tynA5-4	5'-TATGAAAAGCTGGCACACCT
tynA5-5	5'-AGCTGGCACACCTGCCAAAC
tynA5-6	5'-GCTGGCACACCTGCCAAACA
tynA5-7	5'-GGCACACCTGCCAAACAACC
tynA5-8	5'-ACACCTGCCAAACAACCTGG
tynA-3	5'-(GGATCC)GCTTCCCATTATTAACCTCG
feaB5-1	5'-AGCAGAGTGCGTGGCAAAAG
feaB5-2	5'-CACTGCGGGGTTCATGGCAC
feaB5-3	5'-TTGTCACGATTTGCGGAGCT
feaB5-4	5'-CGGAGCTTGTCACAGCTGAC
feaB5-5	5'-TGTCACAGCTGACAAAGCGA
feaB5-6	5'-AAGCGAATGTCACAGCGAAA
feaB5-7	5'-CAGCGAAAAAGTGACTTTT
feaB-3	5'-(GGATCC)CTCTGTCATCACTTTTCCTT
For site-directed mutagenesis	
tynA-C10G	5'-GAAAAGCTGGCAGACCTGCCAAACAACCTGGCAGGTGC
tynA-C10Gr	5'-GCACCTGCCAGGTTGTTTGGCAGGTCTGCCAGCTTTTC
tynA-A11T	5'-GAAAAGCTGGCACTCCTGCCAAACAACCTGGCAGGTGC
tynA-A11Tr	5'-GCACCTGCCAGGTTGTTTGGCAGGAGTGCCAGCTTTTC
tynA-T14G	5'-GAAAAGCTGGCACACCGGCCAAACAACCTGGCAGGTGC
tynA-T14Gr	5'-GCACCTGCCAGGTTGTTTGGCCGGTGTGCCAGCTTTTC
tynA-G15T	5'-GAAAAGCTGGCACACCTTCCAAACAACCTGGCAGGTGC
tynA-G15Tr	5'-GCACCTGCCAGGTTGTTTGGAAGGTGTGCCAGCTTTTC
tynA-C16A	5'-GAAAAGCTGGCACACCTGACAAACAACCTGGCAGGTGC
tynA-C16A r	5'-GCACCTGCCAGGTTGTTTGTCAGGTGTGCCAGCTTTTC
tynA-C17T	5'-GAAAAGCTGGCACACCTGCTAAACAACCTGGCAGGTGC
tynA-C17Ar	5'-GCACCTGCCAGGTTGTTTTGCAGGTGTGCCAGCTTTTC
tynA-A18C	5'-GAAAAGCTGGCACACCTGCCCAACAACCTGGCAGGTGC
tynA-A18Cr	5'-GCACCTGCCAGGTTGTTGGGCAGGTGTGCCAGCTTTTC
tynA-A19C	5'-GAAAAGCTGGCACACCTGCCACACAACCTGGCAGGTGC
tynA-A19Cr	5'-GCACCTGCCAGGTTGTGTGGCAGGTGTGCCAGCTTTTC
tynA-G27T	5'-GAAAAGCTGGCACACCTGCCAAACAACCTTGCAGGTGC
tynA-G27Tr	5'-GCACCTGCAAGGTTGTTTGGCAGGTGTGCCAGCTTTTC
tynA-A30G	5'-GAAAAGCTGGCACACCTGCCAAACAACCTGGCCGGTGC
tynA-A30Gr	5'-GCACCGGCCAGGTTGTTTGGCAGGTGTGCCAGCTTTTC

tynA-G31A	5'-GAAAAGCTGGCACACCTGCCAAACAACCTGGCAAGTGC
tynA-G31Ar	5'-GCACTTGCCAGGTTGTTTGGCAGGTGTGCCAGCTTTTC
tynA-T33A	5'-GAAAAGCTGGCACACCTGCCAAACAACCTGGCAGGAGC
tynA-T33Ar	5'-GCTCCTGCCAGGTTGTTTGGCAGGTGTGCCAGCTTTTC
tynA-G38C	5'-GAAAAGCTGGCACACCTGCCAAACAACCTGGCAGGTCC
tynA-G38Cr	5'-GGACCTGCCAGGTTGTTTGGCAGGTGTGCCAGCTTTTC

For RACE

tynA-A1	5'-AGGGTAAAGAGCTGGGCGTA
tynA-A2	5'-TGCACATCGGCACCAAATTC
tynA-S1	5'-GCAATTGTTAATGGTCAGCC
tynA-S2	5'-GACAATAAAGCCTGGGTTTC
tynA-RT	5'-(phos)TTCGTCCGCAGTTAG
feaB-A1	5'-GTTCACGCTCTGCGGGTAAT
feaB-A2	5'-TTCGTTGGCATCAGCAGTAG
feaB-S1	5'-TGATCTGGTGGAGCAGCACA
feaB-S2	5'-AACTGGAAACCCTGGAGCAA
feaB-RT	5'-(phos)CAAGTCCAGCGTTTT
feaR-A1	5'-GCCAGGTGCGGGATAAATTC
feaR-A2	5'-CTGGTTGTCACGGTACTCAG
feaR-S1	5'-CAGCTTAGTGGTCAGGCAAT
feaR-S2	5'-CAGATTGGCGCTGGCGATAT
feaR-RT	5'-(phos)AGAAAGTGCCGGATT

For CTDhis purification

CTDhis5'	5'-(CAT)ATGAACCCCGCAGTGGATAA
CTDhis3'	5'-(CTCGAG)GCGGAATTTACGTCGATACT

For FeaR CTD and full length FeaR over-expression

|	
CTD5'	5'-(GAATTCACCATG)AACCCCGCAGTGGATAA
CTD3'	5'-(TCTAGA)TTAGCGGAATTTACGTCGATACT
feaR5'	5'-(GAATTCACC)ATGCGGGAATCTGTTCAACC
feaR3'	5'-(TCTAGA)TTAGCGGAATTTACGTCGATACT

For EMSA

tynA5'	5'-(biotin)TAATCGGTGAATGAAGGGCA
tynA3'	5'-TATTAACCTCGTCAGATGTTG
ytfE5'	5'- (biotin)GTTTGCTGTACACCTTTTTA
ytfE3'	5'-AGCTGATACCTCATTCTTAA

Table S2 *E. coli* strains and plasmids

Strain or plasmid	Genotype	Reference or source
***E. coli* strains**		
MG1655	*rph-1 E. coli*	Genetic Stock Center
JOEY270	MG1655 Δ*lacZ*	(8)
JOEY796	JOEY270 λ*feaR-lacZ*	This work
JOEY271	JOEY270 λ*tynA-lacZ*	(8)
JOEY272	JOEY270 λ*feaB-lacZ*	(8)
JW1379	BW25113 *feaR::kan*	Keio library
JOEY797	JOEY 270 λ*feaR-lacZ feaR::kan*	This work
JOEY448	JOEY 270 λ*tynA-lacZ feaR::kan*	(8)
JOEY449	JOEY 270 λ*feaB-lacZ feaR::kan*	(8)
	BW25113 *glnG::kan*	Keio library
	BW25113 *nac::kan*	Keio library
JOEY801	JOEY796 *glnG::kan*	This work
JOEY802	JOEY796 *nac::kan*	This work
JOEY623	JOEY270 *tynA5-1-lacZ*	This work
JOEY719	JOEY270 *tynA5-2-lacZ*	This work
JOEY745	JOEY270 *tynA5-3-lacZ*	This work
JOEY746	JOEY270 *tynA5-4-lacZ*	This work
JOEY625	JOEY270 *tynA5-5-lacZ*	This work
JOEY747	JOEY270 *tynA5-6-lacZ*	This work
JOEY748	JOEY270 *tynA5-7-lacZ*	This work
JOEY749	JOEY270 *tynA5-8-lacZ*	This work
JOEY751	JOEY270 *feaB5-1-lacZ*	This work
JOEY752	JOEY270 *feaB5-2-lacZ*	This work
JOEY753	JOEY270 *feaB5-3-lacZ*	This work
JOEY754	JOEY270 *feaB5-4-lacZ*	This work
JOEY755	JOEY270 *feaB5-5-lacZ*	This work
JOEY756	JOEY270 *feaB5-6-lacZ*	This work
JOEY757	JOEY270 *feaB5-7-lacZ*	This work
JOEY720	JOEY270 *tynA-C10G-lacZ*	This work
JOEY721	JOEY270 *tynA-A11T-lacZ*	This work
JOEY669	JOEY270 *tynA-T14G-lacZ*	This work
JOEY722	JOEY270 *tynA-G15T-lacZ*	This work
JOEY670	JOEY270 *tynA-C16A-lacZ*	This work
JOEY724	JOEY270 *tynA-C17T-lacZ*	This work
JOEY671	JOEY270 *tynA-C17A-lacZ*	This work
JOEY725	JOEY270 *tynA-A18C-lacZ*	This work
JOEY672	JOEY270 *tynA-A19C-lacZ*	This work
JOEY673	JOEY270 *tynA-G27T-lacZ*	This work
JOEY675	JOEY270 *tynA-A30G-lacZ*	This work
JOEY726	JOEY270 *tynA-G31A-lacZ*	This work
JOEY726	JOEY270 *tynA-T33A-lacZ*	This work
JOEY728	JOEY270 *tynA-G38C-lacZ*	This work

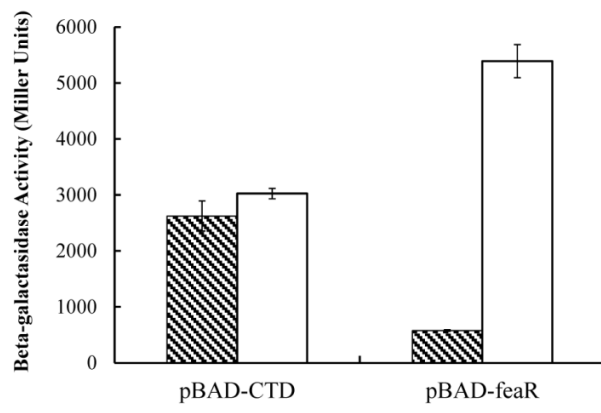| Plasmids		
pRS415		(23)
pSTBlue-1		Novagen
pET21a		Novagen
pET21a-CTDhis	*feaR-CTD*, hexa His-tag at the C-terminus, cloned into pET21a	This work
pBAD24		(25)
pBAD24-CTD	*feaR-CTD*, cloned into pBAD24	This work
pBAD24-CTDhis	*feaR-CTD*, hexa His-tag at the C-terminus, cloned into pBAD24	This work
pBAD24-feaR	*feaR*, cloned into pBAD24	This work
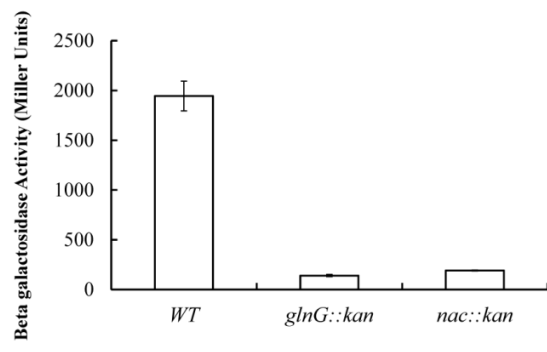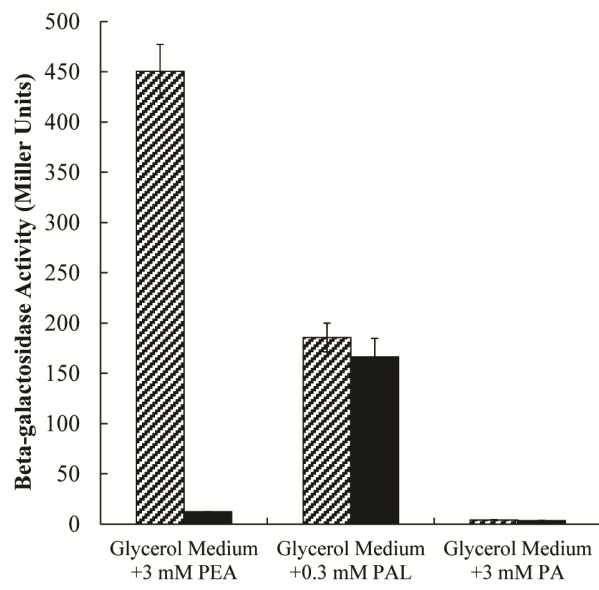
Figure S1. Regulation of *feaR* by NAC. Strains containing the *feaR-lacZ* fusion and *ntrC* (*glnG*) and *nac* mutations were cultured in glutamine medium. Activities are the means of duplicate measurements from each of three independent cultures, error bars are standard deviations.

Figure S2. Activation of the *tynA* promoter requires TynA activity. Strains containing a *tynA-lacZ* fusion (stripped bars) along with a *tynA* mutation (black bars) were cultured in glycerol medium supplemented with PEA, phenylacetaldehyde (PAL), or phenylacetate (PA). Activities are the means of duplicate measurements from each of three independent cultures, error bars are standard deviations. For cells growing in glycerol medium supplemented with PAL, we solubilized PAL in DMSO (to 0.3 M) and then added PAL to the medium to a final concentration of 0.1 mM before inoculation. Two further additions of 0.1 mM PAL were made at 2 hour intervals during growth, prior to sampling of the culture for β-galactosidase assay.

Figure S3. Induction of *tynA* by the FeaR CTD and full-length FeaR *in vivo*. The CTD and FeaR were expressed from pBAD24, in a *tynA-lacZ* reporter strain. Activity of the *tynA* promoter was measured in the absence (striped bars) and presence (open bars) of PEA. Activities are the means of duplicate measurements from each of three independent cultures, error bars are standard deviations.