

	σ factor: name [known/deduced consensus if available]
	known promoters (when no consensus can be clearly deduced)
	SIGffRid output motifs

^{m4} links SIGffRid motifs to known promoter(s) it overlap

Table 1: SIGffRid results compared with known SFBSS motif

Motifs are presented as follow: DNA_motif (R ratio, LRT likelihood ratio test).
(for *S. coelicolor*: $R \geq 0.48$, $LRT \geq 3.84$; for *S. avermitilis*: $R \geq 0.44$, $LRT \geq 3.84$)

σ factor: HrdB	
known HrdB-dependent promoters overlapped by SIGffRid output motifs	
<i>?n:taggct</i> (SCO0598 ^{m4} , sigBp2) [1] <i>ttgaccn₁₈tacggt</i> (SCO1429 ^{m3} , chiD) [2, 3] <i>ttgacan₁₈cacctt</i> (SCO5003 ^{m1 m2} , chiA) [3] <i>ttgaccn₁₇tattct</i> (SCO5376 ^{m3} , chiC) [2, 3] <i>ttgacan₁₇caaatt</i> (SCO5673 ^{m1} , chiB) [3] <i>ttgacan₁₇tagatt</i> (SCOr09 ^{m1} , rrnDp2) [4, 5]	
other HrdB promoters strongly similar to SIGffRid motifs	
<i>tgggcacn₁₈taggat</i> (SCO2026, gltBp1) [6] <i>ttgagcn₁₈taggtt</i> (SCO0561, furA) [7] <i>ttgtcan₁₈tagcat</i> (SCO3471) [8] <i>ttgactggtn₁₄ttgagt</i> (SCO7263, chiF) [3] <i>ttgaacn₁₈tagtgt</i> (SCO2082, ftsZ2p) [9]	
SIGffRid output motifs (spacer range: 14 to 20)	
<i>S. coelicolor</i>	<i>S. avermitilis</i>
<i>tgacan_{17,20}an₃t</i> (0.50, 116.11) ^{m1} <i>ttgacn_{19,20}ancnt</i> (0.61, 65.76) ^{m2} <i>ttgan_{18,19}cta</i> (0.60, 62.49) ^{m3} <i>cngn_{18,21}tagget</i> (0.67, 100.33) ^{m4}	<i>ttgacn_{18,19}tac</i> (0.47, 28.69) <i>ttgan_{18,19}cta</i> (0.49, 43.35) <i>ttgn_{18,20}ccta</i> (0.47, 67.51) <i>ttgn_{17,19}cata</i> (0.47, 45.32) <i>cngn_{18,22}tagget</i> (0.62, 101.89)
σ factor: SigR <i>ggaatn₁₈gtt</i> [10]	
SIGffRid output motifs (spacer range: 14 to 20)	
<i>S. coelicolor</i>	<i>S. avermitilis</i>
<i>ggaatn_{16,19}gtt</i> (0.49, 54.69) <i>ggaaan_{18,20}cgtt</i> (0.48, 42.97)	<i>ggaatn_{17,19}gttg</i> (0.51, 30.98) <i>gaatn_{17,18}gttg</i> (0.44, 25.36)
σ factor: BlpN <i>cgtaacn₁₆cgttga</i> (SCO4768) [11]	
SIGffRid output motifs (spacer range: 14 to 20)	
<i>S. coelicolor</i>	<i>S. avermitilis</i>
<i>cgtaan_{18,19}gtt</i> (0.57, 20.04)	<i>gtaacn_{17,18}gtt</i> (0.52, 17.81)

σ factor: ?, motif similar <i>Bacillus subtilis</i> SigE binding site [12] <i>catattn</i>₁₄<i>cataca</i>	
SIGffRid output motifs (spacer range: 14 to 20)	
<i>S. coelicolor</i>	<i>S. avermitilis</i>
<i>catan</i> _{15,17} <i>tac</i> (0.54, 35.40)	
σ factor (?) involved in sporulation regulation	
SIGffRid output motifs (spacer range: 14 to 20)	
<i>S. coelicolor</i>	<i>S. avermitilis</i>
<i>cngn</i> _{14,16} <i>agtaa</i> (0.49, 67.26)	
<i>agtaan</i> _{13,15} <i>cng</i> (0.48, 58.48)	
DNA-damage inducible promoters motif <i>tgtcagtgcn</i>₆<i>taggg</i> [13]	
SIGffRid output motifs (spacer range: 14 to 20)	
<i>S. coelicolor</i>	<i>S. avermitilis</i>
<i>tgtcagtn</i> _{14,15} <i>tng</i> (0.59, 37.76)	<i>tgtcagtn</i> _{14,15} <i>tng</i> (0.49, 36.73)
<i>tgtcagtn</i> ₁₄ <i>tng</i> (0.63, 36.63)	
SIGffRid output motifs (spacer range: 8 to 14)	
<i>S. coelicolor</i>	<i>S. avermitilis</i>
<i>tgtcagtn</i> _{9,12} <i>ang</i> (0.85, 62.24)	<i>tgtcagtn</i> _{12,14} <i>tng</i> (0.48, 36.05)
<i>tgtcagtn</i> _{12,14} <i>tng</i> (0.64, 43.08)	
TFBS consensus for: BldD <i>agtgan</i>_m<i>tcacc</i> (SCO) [14]	
SIGffRid output motifs (spacer range: 14 to 20)	
<i>S. coelicolor</i>	<i>S. avermitilis</i>
[<i>ta</i>] <i>gtgan</i> _{18,20} <i>tn</i> ₂ <i>c</i> (0.57, 269.95)	[<i>ta</i>] <i>gtgan</i> _{18,20} <i>tn</i> ₂ <i>c</i> (0.48, 242.80)
[<i>ta</i>] <i>gtgan</i> _{16,18} <i>cnt</i> (0.55, 290.18)	[<i>ta</i>] <i>gtgan</i> _{15,19} <i>gn</i> ₂ <i>t</i> (0.47, 400.42)
<i>tgtgan</i> _{18,20} <i>ttna</i> (0.50, 69.54)	<i>tgtgan</i> _{18,20} <i>ttna</i> (0.49, 99.17)
<i>tnan</i> _{16,18} <i>tgtga</i> (0.57, 101.85)	<i>tnan</i> _{16,18} <i>tgtga</i> (0.46, 100.52)
<i>tgtgan</i> _{17,18} <i>tnt</i> (0.55, 76.95)	
<i>tntn</i> _{16,19} <i>ctgtga</i> (0.48, 35.58)	
Other interesting SIGffRid output motifs (spacer range: 14 to 20)	
<i>S. coelicolor</i>	<i>S. avermitilis</i>
<i>taan</i> _{17,21} <i>gtta</i> (0.73, 27.68)	<i>taan</i> _{17,21} <i>gtta</i> (0.48, 18.33)
<i>cgggn</i> _{13,15} <i>tta</i> (0.48, 80.37)	
<i>cccg</i> _n _{14,15} <i>gtaa</i> (0.52, 45.87)	

References

- [1] Cho Y, Lee E, Ahn BE, Roe JH: **SigB**, an RNA polymerase sigma factor required for osmoprotection and proper differentiation of *Streptomyces coelicolor* A3(2). *Mol Microbiol* 2001, **42**(1):205–214.
- [2] Delic I, Robbins P, Westpheling J: Direct repeat sequences are implicated in the regulation of two *Streptomyces* chitinase promoters that are subject to carbon catabolite control. *Proc Natl Acad Sci USA* 1992, **89**:1885–1889.

- [3] Saito A, Ishizaka M, Francisco PJ, Fijii T, Miyashita K: **Transcriptional co-regulation of five chitinase genes scattered on the *Streptomyces coelicolor* A3(2) chromosome.** *Microbiology* 2000, **146**:2937–2946.
- [4] Baylis H, Bibb M: **Transcriptional analysis of the 16S rRNA gene of the rrnD gene set of *Streptomyces coelicolor* A3(2).** *Mol Microbiol* 1988, **2**(5):569–579.
- [5] Kang JG, Hahn MY, Ishihama A, Roe JH: **Identification of sigma factors for growth phase-related promoter selectivity of RNA polymerases from *Streptomyces coelicolor* A3(2).** *Nucleic Acids Res* 1997, **25**(13):2566–2573.
- [6] Brown K, Wood S, Buttner M: **Isolation and characterization of the major vegetative RNA polymerase of *Streptomyces coelicolor* A3(2); renaturation of a sigma subunit using GroEL.** *Mol Microbiol* 1992, **6**:1133–1139.
- [7] Hahn J, Oh S, Roe J: **Regulation of the furA and catC operon, encoding a ferric uptake regulator homologue and catalase-peroxidase, respectively, in *Streptomyces coelicolor* A3(2).** *J Bacteriol* 2000, **182**(13):3767–3774.
- [8] Buttner M, Brown N: **Two promoters from the *Streptomyces* plasmid pIJ101 and their expression in *Escherichia coli*.** *Gene* 1987, **51**(2-3):179–186.
- [9] Flärdh K, Leibovitz E, Buttner M, Chater K: **Generation of a non-sporulating strain of *Streptomyces coelicolor* A3(2) by the manipulation of a developmentally controlled ftsZ promoter.** *Mol Microbiol* 2000, **38**(4):737–749.
- [10] Paget M, Molle V, Cohen G, Aharonowitz Y, Buttner M: **Defining the disulphide stress response in *Streptomyces coelicolor* A3(2): identification of the σ^R regulon.** *Mol Microbiol* 2001, **42**(4):1007–1020.
- [11] Bibb M, Molle V, Buttner M: **σ^{BldN} , an Extracytoplasmic Function RNA Polymerase Sigma Factor Required for Aerial Mycelium Formation in *Streptomyces coelicolor* A3(2).** *J Bacteriol* 2000, **182**(16):4606–4616.
- [12] Roels S, Driks A, Losick R: **Characterization of spoIVa, a sporulation gene involved in coat morphogenesis in *Bacillus subtilis*.** *J Bacteriol* 1992, **174**:575–585.
- [13] Ahel I, Vujaklija D, Mikoc A, Gamulin V: **Transcriptional analysis of the recA gene in *Streptomyces rimosus*: identification of the new type of promoter.** *FEMS Microbiology Letters* 2002, **209**:133–137.

- [14] Elliot M, Bibb M, Buttner M, Leskiw B: **BldD is a direct regulator of key developmental genes in *Streptomyces coelicolor* A3(2).** *Mol Microbiol* 2001, **40**(1):257–269.