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## Function and control of the *ssg* genes in streptomyces

Traag, B.A.

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## Curriculum vitae

Bjørn Traag was born on 11 January 1980 in The Hague (the Netherlands). In 1997 he obtained the diploma for secondary education at the Veurs College in Leidschendam. Thereafter he attended the Hogeschool Leiden and in 2001 obtained a Bachelor equivalent degree in Biochemistry. Between 2001 and 2003 he studied at Leiden University, where in 2003 he obtained a Master's degree (drs./M.Sc.) in Chemistry. During this time he completed internships under the supervision of Dr. Gilles van Wezel at Leiden University and Dr. Gabriella Kelemen at the University of East Anglia (Norwich, United Kingdom). After obtaining his M.Sc. he participated in a project supported by the Netherlands Technology Foundation (STW) under the supervision of Dr. Gilles van Wezel studying effects of SsgA overproduction on growth behaviour and product formation of streptomycetes. In December 2003 he started as a Ph.D. student in Dr. Gilles van Wezel's research group Microbial Development (formerly Genexpress) with Prof. C.W.A. Pleij as his promotor. The work done as a Ph.D. student between 2003 and 2008 is presented in this thesis. During this time he participated in five international meetings and presented his work at two of these. After his Ph.D. he will join the laboratory of Prof. Richard Losick at Harvard University (Cambridge, USA), supported by a Rubicon grant for talented researchers from the Netherlands Organisation for Scientific Research (NWO), to work on nutrient sensing and the onset of sporulation in *Bacillus subtilis*.

## List of publications

- Traag BA** and van Wezel GP (2008). Review: The SsgA-like proteins in actinomycetes: small proteins up to a big task. *Antonie van Leeuwenhoek* (94): 85-97.
- Noens EE, Mersinias V, Willemse J, **Traag BA**, Laing E, Chater KF, Smith CP, Koerten HK, van Wezel GP (2007). Loss of the controlled localization of growth stage-specific cell-wall synthesis pleiotropically affects developmental gene expression in an *ssgA* mutant of *Streptomyces coelicolor*. *Mol Microbiol.* 64(5):1244-59.
- Birko Z, Bialek S, Buzas K, Szajli E, **Traag BA**, Medzihradzky KF, Rigali S, Vijgenboom E, Penyige A, Kele Z, van Wezel GP, Biro S (2007). The secreted signaling protein factorC triggers the A-factor response regulon in *Streptomyces griseus*: overlapping signaling routes. *Mol Cell Proteomics.* 6(7):1248-56.
- Traag BA**, Seghezzi N, Vijgenboom E, van Wezel GP (2007). Characterization of the sporulation control protein SsgA by use of an efficient method to create and screen random mutant libraries in streptomycetes. *Appl Environ Microbiol.* 73(7):2085-92.
- van Wezel GP, Krabben P, **Traag BA**, Keijser BJ, Kerste R, Vijgenboom E, Heijnen JJ, Kraal B (2006). Unlocking *Streptomyces* spp. for use as sustainable industrial production platforms by morphological engineering. *Appl Environ Microbiol.* 72(8):5283-8.
- Noens EE, Mersinias V, **Traag BA**, Smith CP, Koerten HK, van Wezel GP (2005). SsgA-like proteins determine the fate of peptidoglycan during sporulation of *Streptomyces coelicolor*. *Mol Microbiol.* 58(4):929-44.
- van Wezel GP, Mahr K, Konig M, **Traag BA**, Pimentel-Schmitt EF, Willimek A, Titgemeyer F (2005). GlcP constitutes the major glucose uptake system of *Streptomyces coelicolor* A3(2). *Mol Microbiol.* 55(2):624-36.
- Traag BA**, Kelemen GH, van Wezel GP (2004). Transcription of the sporulation gene *ssgA* is activated by the IclR-type regulator SsgR in a whi-independent manner in *Streptomyces coelicolor* A3(2). *Mol Microbiol.* 53(3):985-1000.