

***Streptomyces* Genes in Nature and Medicine**

David A. HOPWOOD

John Innes Centre, Department of Molecular Microbiology, Norwich, NR4 7UH, United Kingdom

Streptomycetes are soil-dwelling members of the actinomycetes, defined as Gram-positive bacteria with a high molar proportion of G and C in their DNA. They exist in vegetative form as a mycelium of interconnected, branching hyphae and undergo reproduction, dormancy and dispersal as desiccation-resistant exospores. Correlated with this morphologically complex life cycle, the streptomycetes are nature's most prolific producers of secondary metabolites of interest in medicine as antibiotics, anti-cancer agents and immunosuppressants. Analysis and manipulation of the genes and genome of the model species, *Streptomyces coelicolor*, has thrown much light on the special features of the group, including their extensive adaptations to life in the soil environment. Study of this and other species has also provided the tools to generate novel 'unnatural natural product' drug candidates by genetic engineering.

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*FEMS Central Office
Poortlandplein 6
2628 BM Delft
The Netherlands
Tel: +31-15-278 5604
Fax: +31-15-278 5696
Email: [fems@
fems-microbiology.org](mailto:fems@fems-microbiology.org)
www.fems-microbiology.org*