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Discovering metabolic loci

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Bacterial genomes often contain clusters of genes involved in secondary metabolite biosynthesis that are not expressed until induction by specific chemical or physical stimuli. In an Advanced Online Publication in *Nature Biotechnology* Zazopoulos *et al.* describe a high-throughput genome-scanning method to detect such clusters in bacterial genomes (*Nature Biotechnology*, 21 January 2003, doi:10.1038/nbt784). Genome sequence tags (GSTs) were screened against a database of microbial gene clusters of metabolic loci in order to rapidly identify novel metabolic loci. Zazopoulos *et al.* used the genome-scanning approach to screen actinomycete strains for genes involved in the biosynthesis of enediyne, a class of anti-tumor antibiotics. They found a conserved cluster of five genes. The putative 'warhead gene cassette' includes a polyketide synthase gene that may be involved in the formation of the reactive chromophore ring structures found in all enediynes.

References

1. The calicheamicin gene cluster and its iterative type I enediyne PKS.
2. *Nature Biotechnology*, [<http://www.nature.com/naturebiotechnology>]