



1000+ New Complete Genomes Aid Discovery Of Natural Products

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POSTER PRESENTATIONS

[82] 1000+ NEW COMPLETE GENOMES AID DISCOVERY OF NATURAL PRODUCTS

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The lack of financial incentive from the pharmaceutical industry has led to a stagnation in the discovery of new antimicrobial compounds, creating a severe threat to human health from multi-resistant bacterial pathogens. Advances in cost-efficient sequencing equipment and bioinformatics tools enable the identification of biosynthetic gene clusters with desirable properties, leading to the discovery of new secondary metabolite compounds and producer strains from *Actinomyces* bacteria.

In order to investigate the biosynthetic potential in *Actinomycetes*, we have developed a comprehensive and efficient pipeline for generating a dataset of more than 1000 Actinomycete genomes sequenced using Nanopore and Illumina sequencing platforms. The pipeline spans the entire process from sampling to benchmarking of the assembled genome.

By predicting the domains required for synthesizing natural products using antiSMASH (antibiotics & Secondary Metabolite Analysis Shell) and comparing them to known biosynthetic pathways we will be able to expand our knowledge of the properties, underlying mechanisms and in turn discover currently unknown features of sustainable natural products.