



We can help you to detect strain drift, differentiate serovars, investigate secondary metabolite production, understand microbial communities, and screen for antimicrobial resistance.

## Helping you understand your strains

A high-quality genome sequence enables the ultimate in strain characterisation, and can be a first step in the development of new or improved microbial applications and processes. For example, genome data can be used to rapidly screen strains for the production of industrially or clinically important secondary metabolites.

Another key application is characterisation of strains used in probiotic products. Screening genomes for the presence of antimicrobial resistance genes and virulence factors is crucial, as strains used must not facilitate the spread of resistance or pose other health risks. We can advise on the approaches and technologies available, and support you in the analysis of the data produced.

## Easy sample submission

You can submit DNA or pure cultures for NGS projects. If you don't have the time or facilities to pre-prepare samples, we can accept mixed cultures, lyophilised end products, and other sample types such as water, slimes or contaminated products for DNA extraction prior to sequencing.

## Bioinformatics expertise

At NCIMB, we have the microbiological knowledge, together with the bioinformatics capability and expertise

required to get the most from your NGS data, no matter what your research or commercial aim. With the latest tools and algorithms for genome assembly, variant calling, genome annotation, metagenomics and genome mining, we ensure our customers get maximum value from their genomic data. We deliver clearly presented results within detailed reports that complement high-quality data. Our capabilities include functional annotation, comparative genomics, phylogenetics, prediction of secondary metabolites, and identification of antimicrobial and virulence markers.

## Microbial community analysis

Metagenomics is revolutionising the understanding of bacterial communities. Tackling everything from identification of beneficial soil microbes to dysbiosis in gut microbes or oilfield souring, the unprecedented resolution of metagenomics gives actionable information for supplementation or remediation.

NCIMB offers both 16S metagenomics and whole-genome shotgun metagenomics to help you understand the makeup of microbial communities and the functional impact of change.

## Fast turnaround

Our experienced, customer-focused laboratory offers a flexible and responsive service for NGS projects.



## 16S metagenomics

Rapidly run hundreds of samples cost-effectively to understand the taxonomic profile of microbial niches and how they differ. Using the latest tools and databases, we can rapidly classify bacterial communities in any environmental sample.

## Whole-genome sequencing

Using the most accurate technology platforms available we can generate *de novo* genome assemblies and reference-guided genome assemblies to a high degree of contiguity, simplifying downstream analysis of your strains.

## Shotgun metagenomics

The best way to understand the functionality of a community, including uncultured and unculturable strains is shotgun metagenomic sequencing. Move beyond taxonomic profiling to functional profiling based on gene content and genetic networks.

## Comparative genomics

Whether you need to monitor strain drift of your working stocks, separate closely related serovars or identify genomic structural variation, we can help you understand your strain's genome.

## Food additive testing

We work to ensure regulatory compliance for our customers, including those who work within the guidelines of EFSA's FEEDAP panel. Our whole-genome sequencing service enables understanding of antimicrobial resistance and virulence capacity.

## Tailored bioinformatics solutions

We understand that some sequencing providers may leave you with data that is hard to action and understand. If you have a requirement for additional analysis, or need a bioinformatics solution tailored to your data, please talk to us about your needs.

## Industry experience

We work on sequencing projects for a number of industrial sectors including academia, food and drink, oil & gas, probiotics, industrial biotechnology, natural products discovery and clinical studies.

## For more information

For more information contact our Bioinformatics Delivery Manager, Dr Daniel Swan.

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