THE SWISS DNA COMPANY

Microsynth

Excellence in Next Generation Sequencing

- Illumina Sequencing
- Oxford Nanopore Sequencing
- Bioinformatics

Microsynth at a Glance

A Real Success Story

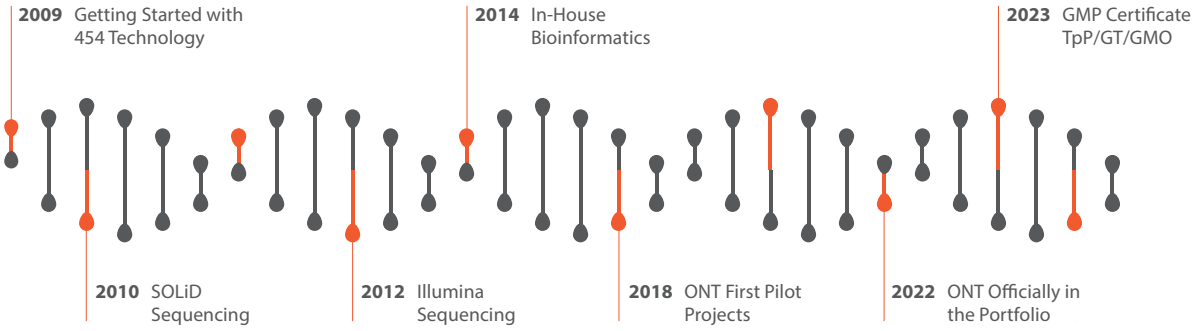
Microsynth has grown from a pioneer in oligonucleotide synthesis into a trusted provider of cutting-edge DNA and RNA sequencing solutions. Today, a key focus of our innovation lies in Next-Generation Sequencing (NGS) – with powerful platforms based on Illumina and Oxford Nanopore Technologies (ONT). These two technologies form the backbone of our expanding NGS portfolio, supporting diverse applications from transcriptomics to metagenomics and viral genome analysis.

Building on more than 30 years of molecular biology expertise, we now offer a comprehensive range of genomic services, including DNA/RNA isolation, PCR assays, Sanger sequencing, and customized contract research. With over 130 specialists across Switzerland, Germany, Austria, and France, Microsynth combines scientific excellence with regional proximity.

As sequencing technologies evolve, so do we—delivering flexible, high-quality solutions tailored to your research needs. Our commitment to quality, innovation, and service ensures that we remain at the forefront of genomics—today and into the future.

Company Overview

Incorporation: 1989
Subsidiaries: Microsynth Seqlab, Microsynth Austria, Microsynth France and Ecogenics.
Expertise: DNA/RNA synthesis and analysis
Employees: >130
Lab Space: 2,850 sqm



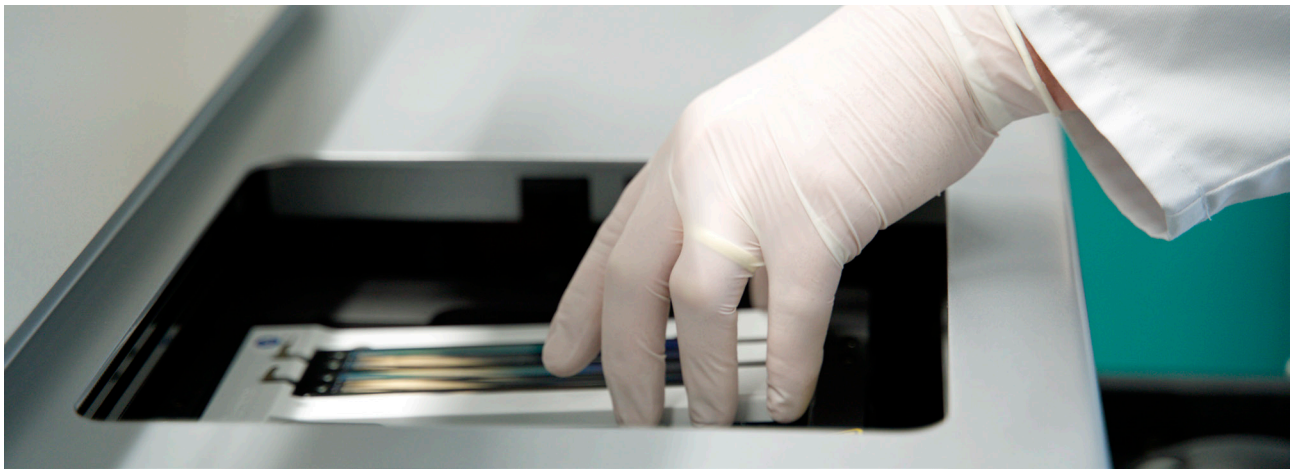
From 454 to Oxford Nanopore – over 15 years of NGS evolution.

Our Brand Promise

At Microsynth, we stand for scientific excellence, precision, and dependable service. Our mission is to empower researchers with high-quality sequencing solutions, delivered on time and at competitive prices – all while respecting environmental sustainability and the wellbeing of our employees.

Your Expert Partner for Next Generation Sequencing

Comprehensive know-how across Illumina and Oxford Nanopore Technologies — from sample to insight.

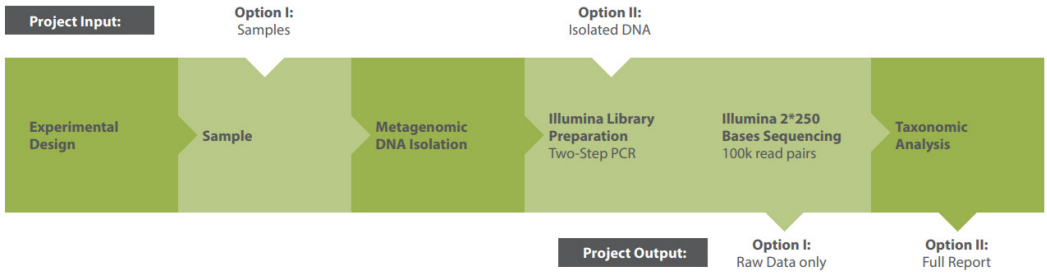


With more than 17 years of NGS experience, Microsynth combines deep technical expertise with a commitment to quality and innovation. Our dedicated sequencing teams master both **Illumina** and **Oxford Nanopore Technologies (ONT)** platforms, providing tailored workflows for applications ranging from **amplicon** and **viral genome analysis** to **whole genome sequencing** and **transcriptomics**.

From sequencing to confident decisions. With integrated in-house bioinformatics, Microsynth delivers robust QC, validated pipelines, and tailored analyses — turning complex NGS data into actionable insights you can trust. Clear reporting and expert guidance ensure reproducible results aligned with your research goals.

From **sample isolation** to **bioinformatics**, we deliver seamless solutions under strict quality standards — ISO 9001 and ISO 17025 certified.

Example Workflow Amplicon Metagenomics:



Dual Platform Expertise
Illumina and ONT sequencing for higest per-base accuracy and excellent structural variant detection.

End-to-End Solutions
Isolation → Library Preparation → Sequencing → Bioinformatics → Reporting

Quality Assured
Certified processes and validated protocols ensure data integrity and reproducibility.

Scientific Excellence
Our experts support you from experimental design to publication.

Illumina Sequencing — Precision, Performance and Proven Results

High-quality short-read sequencing for applications from metagenomics to transcriptomics.

With more than 17 years of experience in high-throughput short-read sequencing, Microsynth operates state-of-the-art Illumina platforms to deliver reliable data for your research.
Our standardized miCORE portfolio provides clearly defined specifications, turnaround times, and transparent pricing.
For more complex studies, we offer customized sequencing and bioinformatics solutions — from low-input RNA to exome or CRISPR/Cas9 projects.
Every step — from nucleic acid isolation to sequencing and data analysis — follows our ISO 9001, and ISO 17025 certified quality management system.

Microsynth operates state-of-the-art Illumina systems in ISO-certified laboratories.

Core Services Overview

Core Service	Description	Typical Applications	Key Features / Specifications
miCORE Amplicon Metagenomics	High-throughput sequencing of 16S/ITS amplicons (approx. 100k read pairs per sample, 2×250 bp).	Microbial profiling, environmental monitoring	2×250 bp paired-end reads; ≥ 100 k read pairs per sample; typical turnaround: 3–5 weeks
miCORE Whole Genome Metagenomics	Shotgun sequencing of total DNA for comprehensive community profiling (1–5 Gb per sample).	Functional metagenomics, resistome analysis	Species/strain-level resolution; optional taxonomic or full functional analysis; turnaround: 4–5 weeks
miCORE mRNA Sequencing	Poly-A RNA-seq (typically 5–60 M read pairs, 2×150 bp) from eukaryotic or microbial RNA.	Gene expression profiling, biomarker discovery	Strand-specific protocol; ≥ 20 M reads/sample; turnaround: 3–4 weeks
miCORE Resequencing	Whole-genome sequencing of bacterial or eukaryotic DNA (≥ 1 Gb/sample, 2×150 bp).	SNP and indel detection, strain validation, mutation analysis	>85% of the bases come with >Q30; scalable coverage; customizable reporting; turnaround: 3–5 weeks

All services are ISO 9001 compliant. Optional ISO 17025 accreditation available for selected projects.

Tailored Illumina Solutions — Because Every Project Is Unique

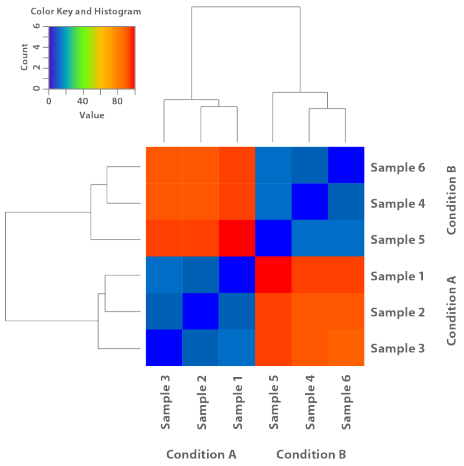
Beyond standard workflows — custom sequencing and bioinformatics for your specific needs.

Custom Services

Service	Focus Area	Example Use Case
Amplicon Deep Sequencing	Targeted variant sequencing	Validation of engineered mutants
CRISPR/Cas9 Sequencing	Genome editing verification	Indel confirmation
Small RNA Sequencing	Non-coding RNA discovery	miRNA profiling
Low-Input mRNA Sequencing	Limited sample input	Organoid samples, rare tissues
Metatranscriptomics Sequencing	Functional microbiome insights	Host–microbiome interaction studies
Whole Exome Sequencing	Targeted exon capture	Marker detection in multigenetic diseases
ChIP Sequencing	Protein–DNA binding mapping	Regulation of gene expression
Ready-to-Load Sequencing	Sequencing of customer-prepared libraries	QC sequencing for collaborative projects

Why Choose Microsynth for Illumina Sequencing?

- Validated Illumina workflows for diverse applications
- Expert bioinformatics support — from QC to publication-ready output
- Transparent project tracking and personalized reporting
- Proven reliability across > 5000 completed sequencing projects



Testimonials

"Partnering with Microsynth has been exceptional. Their outstanding customer care, deep expertise in laboratory and bioinformatics, and proactive communication ensured fast turnaround and superior data quality. In a field where precision and reliability matter most, Microsynth AG is our trusted choice for Amplicon metagenomics analyses."
— Dr. Beat Frey, Swiss Federal Institute for Forest, Snow and Landscape Research (WSL)

"What I especially appreciate is the excellent customer service. I receive fast and reliable responses to quotation requests, and the team is always flexible with special or last-minute requests. Questions about workflow or data are answered quickly and competently, and the online consultation meetings—from project planning to data interpretation—add great value to the service."
— Lisa Bauer, Bioenergy and Sustainable Technologies GmbH

"Over several years, Microsynth has provided Illumina sequencing for our preclinical pooled functional genomics projects, and we've been satisfied with both their results quality and customer support."
— Joanna Gawden-Bone, Manager, Revvity Preclinical Services, Revvity

Oxford Nanopore Sequencing – Flexibility & Long Reads

Long-read sequencing to resolve complex genomes and detect structural variation.

At Microsynth, we leverage Oxford Nanopore Technologies (ONT) to deliver an unparalleled combination of read length, speed, and versatility.
We operate MinION, GridION, and PromethION platforms under ISO-certified quality standards to deliver high-quality sequencing data for plasmids, microbial genomes, and eukaryotic DNA.
Our nanoCORE portfolio offers standardized services with clearly defined specifications, while custom ONT projects allow maximum flexibility — for hybrid assemblies, viral genome characterization, or epidemiological analyses.
Every project is handled by experienced NGS specialists who ensure reliable results within defined timelines.

ONT sequencing at Microsynth — from plasmids to whole genomes.

Core Services

Core Service	Description	Typical Applications	Key Features / Specifications
nanoCORE Amplicon Metagenomics	Full-length 16S, ITS, or 18S amplicon sequencing for strain-level resolution.	Microbiome studies, taxonomic profiling, strain differentiation	Up to 1.5 kb amplicons; strain-level taxonomic resolution; turnaround ≈ 2 weeks
Full PlasmidSeq	Complete plasmid sequencing with no assembly gaps using long reads.	Plasmid verification, vector design validation, GMO characterization	Circular consensus assembly; accurate reconstruction up to > 300 kb; turnaround ≈ 2–3 wd
Long PCRSeq	ONT sequencing of long PCR products (1–20 kb).	Validation of engineered constructs, gene fusions, or transgene integrations	Rapid library prep; accurate assembly across repetitive or GC-rich regions; turnaround ≈ 2–3 wd
BacterialSeq	Whole-genome sequencing of bacterial isolates for full-length assemblies.	Strain typing, resistance or virulence gene detection, contamination analysis	Average coverage ≥ 50×; hybrid assembly option (with Illumina); turnaround ≈ 3–7 wd
YeastSeq	Whole-genome sequencing of yeast strains.	Production strain verification	Average coverage ≥ 50×; turnaround ≈ 2 weeks

All services are ISO 9001 compliant. Optional ISO 17025 accreditation available for selected projects.
Optional isolation can be added to any service, extending the turnaround time by approximately one week.

When to choose ONT over Illumina

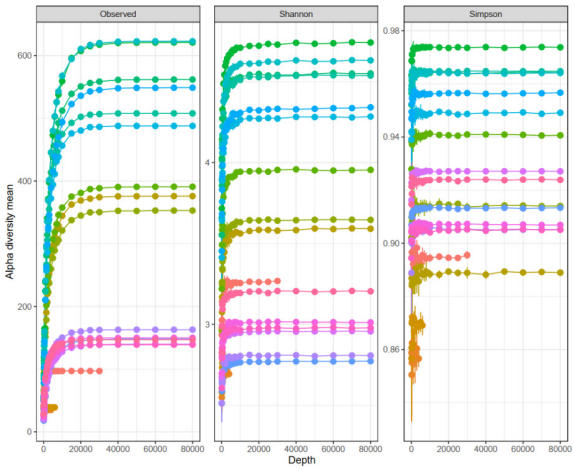
Use Case	Why ONT Excels
Structural Variant Detection	Ultra-long reads reveal rearrangements, inversions, and repeat expansions.
Genome Closure	Long reads enable complete assembly of plasmids and microbial genomes.
Difficult Regions	Robust performance on high-GC or repetitive sequences.
Hybrid Assembly	Combine ONT long reads with Illumina short reads for best of both worlds.

Tailored ONT Solutions — From De Novo to AAV Genomes

Advanced long-read sequencing for complex biological questions.

Custom Service

Service	Focus Area	Example Use Case
ONT De Novo Sequencing	Reference-free genome assembly	Discovery of new microbial species or plasmids
ONT Resequencing	Variant calling and structural variation	Mutation analysis, genome evolution
ONT Genomic Epidemiology	AMR and plasmid surveillance	Outbreak tracking, resistance gene mapping
ONT AAV Genome Sequencing	Viral vector genome integrity	Gene therapy research, QC validation
ONT Eukaryotic Genome Sequencing	Large, complex eukaryotic genomes	Reference genome generation



Why choose Microsynth for ONT Sequencing?

- **Validated ONT protocols for a wide range of organisms**
- **Hybrid assembly options (ONT + Illumina) for maximum accuracy**
- **Rapid and predictable turnaround — from 2 to 4 weeks depending on scope**
- **Customizable bioinformatics pipelines for specific research goals**
- **ISO 9001 and ISO 17025 certified quality management**

Testimonials

"The sequencing performance was not only good, but great."
— Prof. Dr. Benjamin Lamp, Justus-Liebig Universität

"Painless and fast, from submission to result in three days. Thorough archive of results. Will definitely use it again in the future!"
— Joaquin Navajas Acedo, PhD, Biozentrum, University of Basel

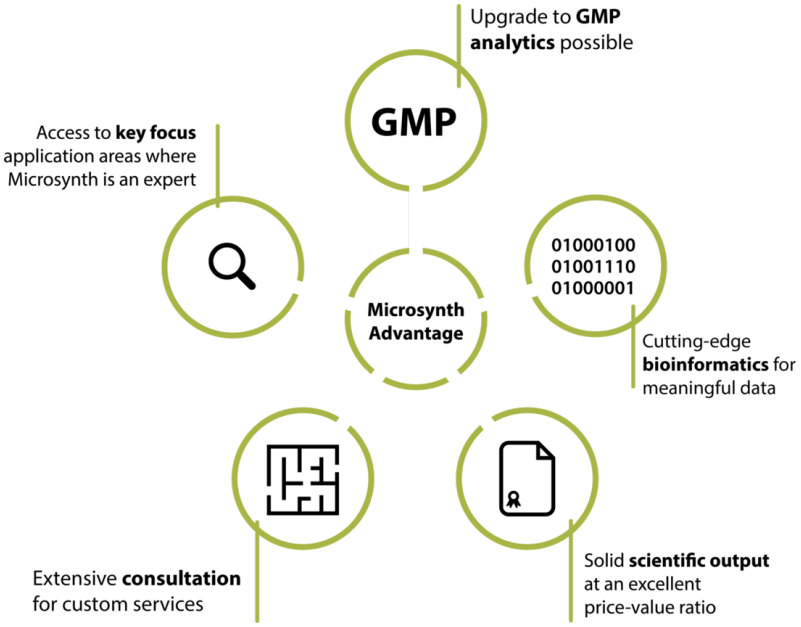
NANOPORE Service Certified

Start your project: genome@microsynth.ch

Why Microsynth? — Because Expertise Matters

Your trusted European partner for high-quality, ISO-certified NGS solutions.

For more than three decades, Microsynth has combined scientific precision with dependable service.
Our customers value our deep expertise, certified quality, and local presence — ensuring that every sequencing project runs smoothly from sample to result.
Whether you need high-throughput Illumina sequencing or long-read Oxford Nanopore data, Microsynth delivers results you can rely on.



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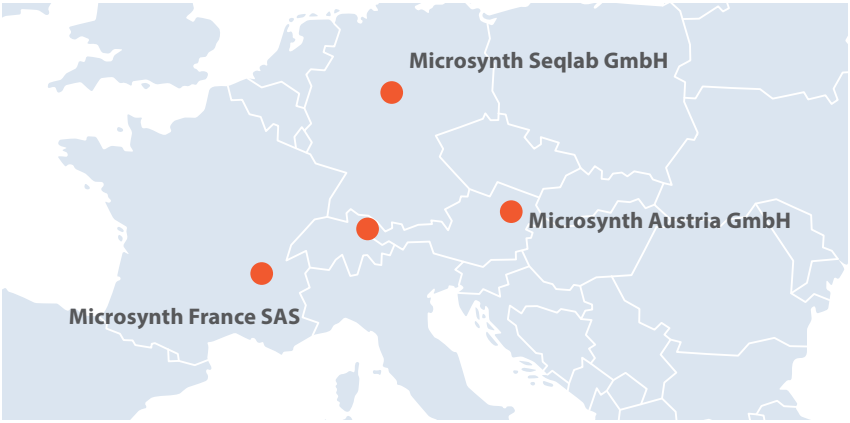

Start your project → Scan to request a quote

www.microsynth.com