

# SINTEF – Department of Biotechnology and Nanomedicine

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Geir Klinkenberg (Research Manager)

„We offer state-of-the-art infrastructure and extensive experience in assay development and high throughput screening including toxicity, and antibacterial- and antifungal activity. We also offer activity assays towards a range of mammalian cell lines.“

## At a glance

- Independent non-profit research organization welcoming academic and industrial collaborations
- Research within bioprocess development, biomaterials, immunotherapy, vaccines, gut health, drug delivery and nanomedicine
- Biochemical, microbial and mammalian cell-based high-throughput screening
- Advanced cell models (incl. spheroids, barrier, biofilm), coupled to advanced reporter assays
- Functional screening of patient cells for personalized medicine
- High-sensitivity and in-depth analysis including transcriptomics, metabolomics, proteomics and lipidomics

## Infrastructure and technical focus

- Four automated liquid handling robots, fully integrated with FACS, high-content confocal imaging, and all available detection technologies
- Fully automated cell cultivation robotics with image-based readouts
- Biosafety Level 1 and 2 laboratories, specialized for viruses, eukaryotic and microbial cell-based screening
- High-throughput mass spectrometry
- Bioreactors for bioproduction from micro- to pilotscale



## Projects past and present

**2020** | Novel treatment for neuronal reoxygenation injuries (Development of inhibitors to undrugged DNA repair enzymes)

**2019** | **PRESORT** Functional drug screening as clinical decision support in colorectal cancer

**2017 - 2021** | **H2020 REFINE** Risk-benefit assessments of medical products and devices based on nanomedicines and biomaterials [➔ Link](#)

**EU-NCL** The European nanomedicine characterisation laboratory [➔ Link](#)

## Our science in selected publications

High-throughput screening reveals higher synergistic effect of MEK inhibitor combinations in colon cancer spheroids  
[➔ Science Reports \(2020\), 10, 11574](#)

A high-throughput drug combination screen of targeted small molecule inhibitors in cancer cell lines  
[➔ Scientific Data \(2019\), 6, 237](#)

Identification of Regulatory Genes and Metabolic Processes Important for Alginate Biosynthesis in *Azotobacter vinelandii* by Screening of a Transposon Insertion Mutant Library  
[➔ Frontiers in Bioengineering and Biotechnology \(2020\), 7, 475](#)

Engineering chitinolytic activity into a cellulose-active lytic polysaccharide monooxygenase provides insights into substrate specificity  
[➔ Journal of Biological Chemistry \(2019\), 294, 19349-19364](#)

## Further info and site-contact

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