# NUCLEIC ACID BIOLOGY AND TECHNOLOGY

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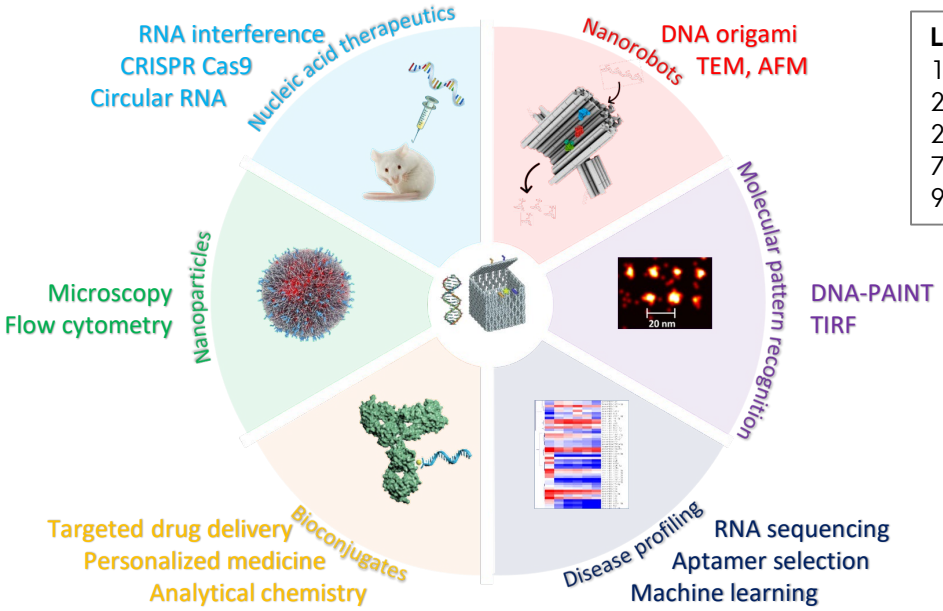


**Lab members:**
1 professor
2 assistant prof.
2 lab technicians
7 post docs,
9 PhD students

**Main research interests:**

a) Understanding how non-coding RNAs contribute to cell maintenance and disease development with a primary aim of defining new targets for disease intervention

b) Creating new innovative gene medicine for disease intervention, bioimaging and delivery systems with a special focus on inflammation, cancer and COVID-19

c) Discovery of RNA (from NGS data) and protein (from aptamer screens) in biofluids that can act as biomarkers for cardiovascular, cancer, viral and neurological diseases.

d) Inventing fast and sensitive molecular sensors for diagnosis and treatment of disease (incl. SARS-CoV2)

**Examples of research projects in the Kjems lab**

- Function of circular RNA in neuronal development
- Targeting breast cancer with multivalent systems
- Designing SARS-CoV2-specific aptamers
- Nanopatterning of molecules for enhanced signalling
- Tracking cellular receptors at single molecule level
- Delivery of biologics across the blood brain barrier
- DNA nanopore for single molecule detection
- Why do patients react differently to SARS-CoV2 infection? – a biomarker study.
- Can exosomes enhance tissue regeneration?

More information at cellpat.au.dk, cembid@au.dk and inano.au.dk/about/research-groups/nanomedicine-joergen-kjems-group

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