Funded Postdoctoral Fellowship

Protection of DNA Nanostructures against Nuclease Degradation (ShielDNA)

Location: Université Grenoble Alpes, Department of Molecular Chemistry (DCM) and Department of Molecular Pharmacochemistry (DPM)
Supervision: Dr. Quentin Laurent (DCM) and Prof. Éric Peyrin (DPM)
Duration: 2 years; **Start date**: Sept. 1st, 2026

The project: The field of DNA nanotechnology, taking advantage of the programmable base pairing of DNA, has known great success in the past decades to organize matter at the nanoscale. Multiple applications arose of DNA nanostructures in biology to manipulate or interact with cells with unrivaled precision, but this has been hampered by the low stability of DNA in biological conditions, especially because of its digestion by enzymes called nucleases. **ShielDNA** aims at creating different inhibitors of nucleases by CE-SELEX (Capillary Electrophoresis Systematic Evolution of Ligands by EXponential enrichment), and at using them in conjunction with DNA nanostructures to protect them from degradation.

The position: The work will be shared between the two host laboratories (DCM and DPM). The recruited postdoctoral fellow will synthesize structured oligonucleotide libraries in the DCM and perform selection by CE-SELEX against various nucleases in the DPM. The creation of multiple DNA nanostructures of different morphologies, their decoration with the selected inhibitors, and their stabilization will be studied in the DCM. The work will consist in a combination of oligonucleotide synthesis and self-assembly on one side, and on directed evolution and preliminary biological evaluations on the other.

The candidate:

- You are curious, research-driven and rigorous in your work, with good communication skills. You show initiative and creative thinking and are a team player.
- You have experience in the fields of oligonucleotide, directed evolution by SELEX and/or supramolecular chemistry, and a good scientific track record.
- Previous experience in DNA nanotechnology will be greatly appreciated but is not mandatory.
- You must hold a PhD degree since less than three years.

How to apply: An email should be addressed to quentin.laurent1@univ-grenoble-alpes.fr and eric.peyrin@univ-grenoble-alpes.fr with "Postdoctoral Fellowship Application ShielDNA" as the subject. Applications should include a single PDF file containing a detailed CV including a list of publications, a short research summary, a cover letter, a proof of obtention of the PhD diploma and the contact of at least two references you worked with.

Successful candidates will be invited to an online interview.

The DCM and DPM laboratories are composed of 5 and 2 teams respectively, covering most aspects of molecular chemistry, and fully equipped to handle synthesis, selection and characterizations of DNA nanostructures. Grenoble is the capital of the French Alps, located 1 h away from Lyon. Nested in the middle of the mountains, it offers a high quality of life for one who loves nature.