PhD position in chromatin NMR studies of native genomic nucleosomes

A 4-yr PhD student position is open in the group of Hugo van Ingen at the Utrecht University NMR Group in the Netherlands. The project aims to uncover the true nature of nucleosomes by studying the structural dynamics of native, genomic nucleosomes and to use this to understand how pioneer transcription factors can activate silenced genes. Ultimately, this project may help to develop improved reprogramming factors in regenerative therapies.

You will reconstitute nucleosomes containing genomic DNA sequences that are targeted by Sox2 in cells and study their structural dynamics and interactions using an integrative, NMR-driven approach. The project is a collaboration with the group of Abdenour Soufi (University of Edinburgh, cell biology of pioneer factors), John van Noort (Leiden University, single molecule dynamics) and Vlad Cojocaru (Utrecht University, molecular dynamics simulations).

We seek a highly motivated MSc graduate with experience in recombinant protein work and PCR and a strong interest in structural studies. Experience in NMR is an advantage. The project combines biochemistry, biophysical assays, and structural and dynamical characterization using NMR, allowing you to become an all-round structural biologist as well as NMR and chromatin expert.

The project is fully funded and you will be able to make use of the excellent NMR infrastructure of 9 NMR machines, including the 1.2 GHz machine, which will greatly benefit this project. You will be part of an interdisciplinary and dynamic team of researchers with many common interests and approaches. The group shares office and lab space with the groups of prof. Marc Baldus (in-cell and solid-state NMR), dr. Markus Weingarth (antibiotics, solid-state NMR) and prof. dr. Alexandre Bonvin (HADDOCK, computational structural biology). We regularly meet and collaborate with other chromatin groups on campus (Francesca Mattiroli, Jan Lipfert, Tuncay Baubec, Aniek Janssen).

Offer:

- A position for 4 years, starting early 2023;
- Training and professional development via the Graduate School of Life Sciences;
- A full-time gross salary starting at €2,541 and increasing to €3,247.
- 8% holiday bonus and 8.3% end-of-year bonus;
- A pension scheme, partially paid parental leave, and many flexible employment conditions.

Contact info:
Hugo van Ingen, h.vaningen@uu.nl, www.vaningen-nmr.nl, www.uu.nl/en/research/nmr

To apply:
Send a motivation letter, CV and contact info for two references to h.vaningen@uu.nl

Recent publications:

- Chaperoning of the histone octamer by the acidic domain of DNA repair factor APLF (2022), Corbeski, … Sixma, Mattiroli and van Ingen, *Sci. Adv.*
- Beyond the Nucleosome: Nucleosome-Protein Interactions and Higher Order Chromatin Structure (2021), Lobbia.. van Ingen, *J. Mol. Biol.*
- Ramified rolling circle amplification for synthesis of nucleosomal DNA sequences (2020), van Emmerik, … van Ingen, *Anal. Biochem.*
- Structural basis of specific H2A K13/K15 ubiquitination by RNF168 (2019), Horn, Uckelmann … Sixma and van Ingen, *Nat. Comm.*
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