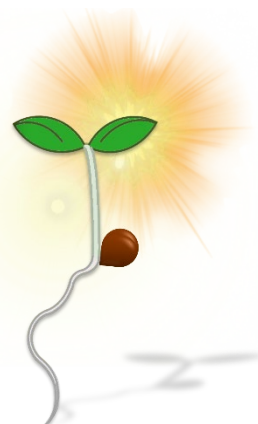


Post doctoral candidate (M/F) (24 months) Molecular mechanisms of Heat Shock Factors (HSFs)

Mission: Postdoctoral position for 24 months in the StrucDev team of the Laboratoire de Physiologie Cellulaire et Végétale (LPCV, Grenoble) as part of the ANR funded project P-HEAT. The project will study the molecular mechanism by which HSFs control transcriptionally both short- and long-term heat stress response as well as their role on regulatory element activation with a focus on their ability to act as pioneer transcription factors. The project combines structural biology, biochemistry and genome-wide binding studies to determine how HSFs interact with DNA and nucleosomes, and how these interactions govern gene regulation during heat stress. The candidate will use AI structure prediction tools to examine HSF and DNA/nucleosome interactions, express and purify recombinant HSFs and structurally characterize HSF-DNA complexes using X-ray crystallography and/or electron microscopy. In addition, the candidate will develop nucleosome reconstitution methods and genome-wide HSF-DNA binding assays. This project will be performed in collaboration with team members (technicians and researchers) and the team of M. Benhamed, IPS2, Paris. For more information <https://doi.org/10.1038/s41467-023-36227-3>.



Main activities: Express and purify HSFs from Arabidopsis, tomato and other species and test their interactions with naked and nucleosomal DNA. Determine if HSF are able to bind nucleosomes and displace histones (pioneer activity). Determine the structure of HSFs in complex with DNA using X-ray crystallography or electron microscopy.

Competences: PhD in an appropriate biological field (structural biology, biophysics, biochemistry, plant biology). Solid background in structural biology, biophysics, biochemistry and molecular biology. Fluency in written and spoken English is required. Fluency in French is desired. Good interpersonal skills and the ability to work independently and as part of a, international team.

Context: The researcher will be employed by the CNRS and will be part of the StrucDev team at the Laboratory of Plant and Cell Physiology (LPCV, UMR 5168 – CNRS, CEA, Université Grenoble Alpes, INRAE) in Grenoble, France. The project will be supervised by the team leader, Chloé Zubieta. The team's research focuses on the atomic and molecular determinants of protein function in plant development and on how environmental conditions affect the structure and activity of various transcription factors, transcriptional and translational regulators, and scaffold proteins. This position is part of a collaborative project funded by an ANR grant, and will involve numerous interactions and synergies with national and international partners.

Remuneration: from 2991€/mo. Based on experience

Link: <https://emploi.cnrs.fr/Offres/CDD/UMR5168-CHLZUB-005/Default.aspx>