Postdoctoral Research Fellowship in Chemical Protein Synthesis

An ANR funded postdoctoral position is available at the CNRS Centre de Biophysique Moléculaire (CBM, Orléans, France) in the "Synthetic Protein and Bioorthogonal Chemistry" group headed by Dr. Vincent Aucagne. The duration of the project is 14 months and focuses on the total synthesis of natural disulfide-rich mini proteins (50-90 amino acids) with bio-insecticide properties, to decipher their 3D structure, biological activities, and modes of action, in close collaboration with research groups on structural biology, molecular biology and Entomology. The contract is expected to begin in April 2021.

Keywords:
Chemical protein synthesis; Native chemical ligation; Oxidative folding; Chemical biology

Profile:
An ideal candidate should have a PhD in chemistry with expertise in organic chemistry and solid-phase peptide synthesis, as well as purification and characterization of biomolecules by HPLC and MS. Previous experience with chemical protein synthesis, chemical ligation or protein folding will be a plus, as well as interest in protein structure/function and structure/evolution. The candidate is expected to be highly motivated, independent yet as a team member, and capable of solving challenging synthetic problems and proposing alternative strategies.

Remuneration:
According to experience, monthly gross salary: 2300-2700 euros.

Application:
Please send your application by e-mail (*ASAP*, before February 27, 2021) to Vincent Aucagne.
The application file must contain:
- *An application letter* including your motivation for this position.
- Your *Curriculum Vitae* including a list of publications and contact details of at minimum two references for recommendation letters.

Selected publications from the host group related to the project:

Abboud *et al.* A straightforward methodology to overcome solubility challenges for N-terminal cysteinyl segments in native chemical ligation, *Chem. Sci.* 2021, *12*, in press.

Guyot *et al.* Structure, function and evolution of Gga-AvBD11, the archetype of a new structural avian-double-β-defensin family, *Proc. Natl. Acad. Sci. USA* 2020, *117*, 337−345.

Loth *et al.* The ancestral N-terminal domain of big defensins drives bacteria-triggered assembly into antimicrobial nanonets, *mBio*, 2019, 10:e01821-19.

Jacobsen *et al.* A helping hand to overcome solubility challenges in chemical protein synthesis. *J. Am. Chem. Soc.* 2016, *138*, 11775−11782.

Terrier *et al.* A straightforward method for automated Fmoc-based synthesis of bio-inspired peptide crypto-thioesters. *Chem. Sci.* 2016, *7*, 339−345.

Aucagne *et al.* Towards the simplification of protein synthesis: iterative solid-supported ligations with concomitant purifications. *Angew. Chem. Int. Ed.* 2012, *51*, 11320-11324.

Valverde *et al.* Synthesis of a biologically active triazole-containing analogue of cystatin A through successive peptidomimetic alkyne–azide ligations. *Angew. Chem. Int. Ed.* 2012, *51*, 718-722.