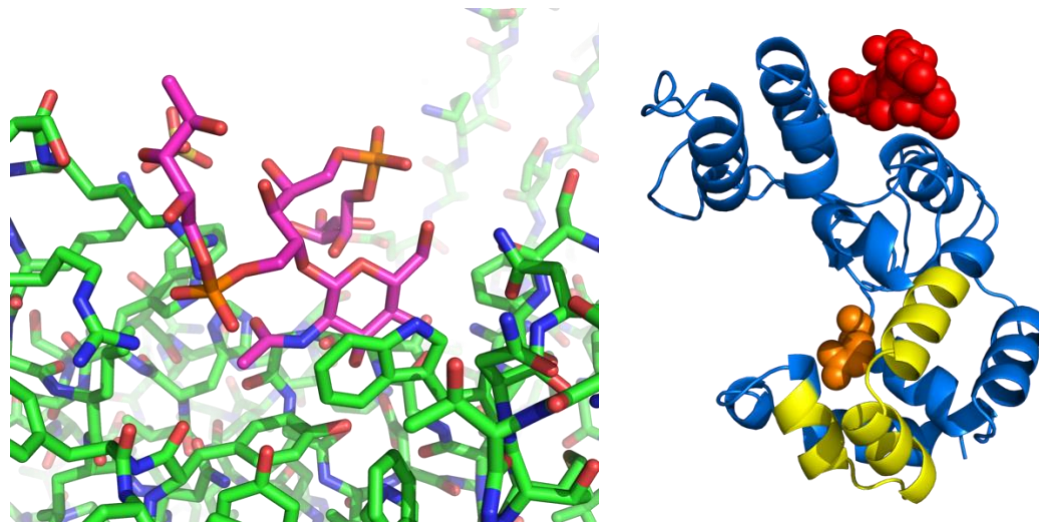


The research group "Structural Biology of Bacteriophage and Virus Proteins" led by Mark van Raaij is looking for a new doctoral student. We are in the Macromolecular Structure department of the National Biotechnology Centre in Madrid.



Correct recognition of the bacterial cell wall is of crucial importance to the life cycle of a bacteriophage, both for deciding which bacterium to infect as for lysing the host after phage multiplication. We perform high-resolution structural studies on the proteins involved in these processes, using X-ray crystallography, preferably in complex with their receptors or substrates.

Tailed bacteriophages bind to their host cell receptors via specialized spike or fibre proteins. To lyse their host cells, bacteriophages produce endolysins that digest the bacterial peptidoglycan layer. Knowledge of the structures of bacteriophage receptor-binding and endolysin proteins may lead to different applications. Modification of the bacteriophage fibre receptor binding specificities may lead to improved detection of specific bacteria and to mutant phages with improved host ranges. A better understanding of endolysin structure, stability and specificity may similarly lead to better elimination of pathogenic or otherwise unwanted bacteria, and to mutant endolysins with a different or wider range of target bacteria.

We are looking for candidates that:

- enjoy and have talent in microbiological / biochemical lab work and affinity with computing
- very high undergraduate marks, average well over 8 in the Spanish system or officially comparable for international degrees (to have a chance of obtaining a Spanish FPU or Comunidad de Madrid fellowship).

We offer between 6 and 18 months of salary, while the student applies for competitive fellowships, and, most importantly, exciting funded projects as described above.

Candidates should send CV, academic record and a short motivation letter to Mark van Raaij, email mjvanraaij@cnb.csic.es