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I AM LOOKING FOR: A PARTNER (FOR MY PROJECT) A PROJECT TO JOIN

BRIEF DESCRIPTION OF YOUR PARTNER SEARCH (*) (2-3 lines to be published on the website – the complete form will be available to download)

Viruses are present throughout all ecosystems and are the most abundant type of biological entity. Structural studies have shown that viruses infecting very different hosts (eg bacteria and human) share similar architectural solutions. We are interested in joining a project with the potential to discover new viruses whose study may shed new light on the diversity, evolution, structure and stability of virus capsids.

Please complete the information below depending if you are looking for a partner (to join your project), or a project (you would like to join) – Max 1 page.

DESCRIPTION OF YOUR EXPERTISE / SKILLS

We are a structural biology group with expertise on the study of large, complex viruses using conventional and cryo-electron microscopy (cryoEM). CryoEM is nowadays the best methodology to solve the structure of large macromolecular complexes at high resolution. We are located at the CNB-CSIC in Madrid, a Spanish Excellence Center (<http://www.cnb.csic.es/index.php/en/>) and a cryoEM INSTRUCT node (<http://i2pc.cnb.csic.es/>). The CNB-CSIC has a cryoEM facility with the adequate equipment to reach high resolution in 3D maps (<http://www.cnb.csic.es/index.php/es/investigacion/servicios-cientificos/microscopia-crioelectronica>). We have access to other techniques to characterize the architectural properties of virus particles, such as atomic force microscopy. We have successfully applied these methodologies to the study of complex viruses which infect hosts very different in evolutionary terms, yet use very similar folds to build their capsids (<http://tinyurl.com/sanmartinlab>).

DESCRIPTION OF YOUR PROJECT / THE PROJECT YOU WOULD LIKE TO JOIN

We would like to join a project with the potential to discover new viruses from scarcely explored environments, eg soil, extreme climate regions, deep waters, etc. We envisage a synergistic collaboration with groups discovering these viruses and their hosts, to examine the possibilities of producing them in culture for structural studies. The questions we would like to address are: (i) is the diversity in protein folds used by viruses limited to the few cases known today? (ii) how has evolution shaped the structural space of viral capsid proteins? (iii) what kind of architectural solutions allow virus capsids to withstand extreme environmental conditions?

DESCRIPTION OF THE EXPERTISE / SKILLS YOU ARE LOOKING FOR IN YOUR PROJECT

Please send this form back to: biodiversa@fondationbiodiversite.fr