

BSC Senior Life Sciences researcher, Victor Guallar, awarded prestigious European Research Council Advanced grant

Barcelona, March 3rd, 2010.-Dr. Víctor Guallar, senior researcher from the Life Sciences department at the Barcelona Supercomputing Center (BSC), has been awarded one of the most prestigious European grants related to Science.

Dr. Guallar called for the European Research Council Advanced grants for his research project Protein Energy Landscape Exploration (PELE), which is based on the project developed by him and his research team for the last three years at BSC.

This research project will be funded with 1.4 million € for the next 5 years. This grant is aimed to recognise projects headed by young and established researchers and Victor Guallar is one of them. "This grant is very important for the group. It recognizes that we are doing things in the right way and, more importantly, it allows us to develop the projects we believe in. Yes, we believe it will be a very useful contribution to drug discovery", Guallar says.

Guallar called for this grant with the following summary: "Let's imagine that we have developed a drug with very good potency for some cancer therapy. However, with time, many patients start developing resistance to the drug due to some particular point mutation as a result of the high metabolism of the cancer cells. Or let's imagine that some specific treatment for a virus has lost its efficacy due to some viral mutation. Those mutations are not largely affecting the protein, since it is obviously still functional, but most likely affect some dynamical aspect of it, such as conformer stabilization, entrance channel, etc... that inhibits the drug binding and/or delivery. Or simply let's imagine that we are stuck in the development of our drug. To fix these problems we would like to obtain the atomic mechanism for the drug-protein dynamical behaviour, and modify our original drug accordingly. Such a study, by experimental means, is quite complex, time consuming and expensive. Now let's imagine that we connect our computer to a server, that we introduce the coordinates of our protein, the mutation, the drug, and that we go to sleep. The day after we obtain an email: our results are ready. The computer modelling has obtained the drug-protein recognition mechanism, from which we can proceed and design a novel drug, "a la carte novel drug". With several drug candidates, we repeat the process and obtain one that does indeed bypass the mutation, or has the desired affinity. We propose the development of such a tool, of such a server. Although it might seem a futuristic view, we have developed technological advances that make possible such an approach today."

Francesc Subirada, Associate Director at BSC, stresses that "BSC is very proud that Victor Guallar's team has been awarded this highly prestigious grant as a recognition of their hard work and effort".

About the European Research Council

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