Postdoctoral position available at the interface of Academia and Industry

In the frame of a new funding scheme of the Federation Wallonia-Brussels (BEWARE FELLOWHIPS *Academia*, co-financed by the COFUND program of the EU/FP7 - Marie Curie Actions), the Centre for Protein Engineering at the University of Liège (Belgium) is seeking for a collaborator holding a PhD degree. The aim is to apply for a postdoctoral fellowship to work on the project shortly described below and for which a high success rate is expected. This program focuses on technology transfer and fellowships will be available to perform a research stay at the University, in partnership with a Walloon company (Eurogentec). Over the period covered by the mandate (30 months), six months must be spent in the company. The call for proposals has just been launched and the deadline for submission is 15 October 2014. Note for the mobility criterion: all nationalities, including Belgian; the condition is to have spent less than 12 months over the last three years in Belgium.

Research program. Modern recombinant DNA methodologies give rise to high production of heterologous proteins in *E. coli*, at relatively low cost. High level expression of recombinant protein often results, however, in the production of biologically inactive molecules that accumulate in the host cells as insoluble inclusion bodies (IBs). Although isolation and solubilization of IBs followed by renaturation is a straightforward method to obtain large amounts of purified active proteins, this is often hampered by severe difficulties in protein refolding leading to low yield of biologically active material. Aiming at developing a universal method for protein refolding, we will optimize and extend a simple method that was shown to effectively refold both soluble and membrane proteins (Michaux *et al*., 2008; Roussel *et al.*, 2012, 2013, 2014). Both soluble and membrane proteins will be considered and model representatives of each class will be selected.

The search for optimal and largely applicable conditions for refolding proteins from IBs, will be performed with the help of an automated multi-channel pipetting workstation. This material, in combination with a range of equipment for high throughput analysis (e.g. absorbance and fluorescence measurement, protein separation, analysis of interactions), will allow a wide range of experimental conditions to be tested in a reasonable amount of time. All experiments will be planned following a careful experimental design (DOE).

This project is part of a collaborative effort between the group of Prof. André Matagne (contact person, see below), the group of Drs Catherine Michaux and Eric Perpète (University of Namur, Belgium), and Eurogentec, a renowned biotech company based in the Liège area.

References

Michaux, C., Pomroy, N.C., Privé, G.G. (2008) Refolding SDS-denatured proteins by the addition of amphipathic cosolvents, *J. Mol. Biol*. **375**, 1477-1488

Roussel, G., Matagne, A., De Bolle, X., Perpète, E., Michaux, C. (2012) Purification, refolding and characterization of the trimeric Omp2a outer membrane porin from *Brucella melitensis*, *Protein Expr. Purif*. **83**, 198-204.

Roussel, G., Perpète, E.A., Matagne, A., Tinti, E., Michaux, C. (2013) Towards a universal method for protein refolding: the trimeric beta barrel membrane Omp2a as a test case, *Biotechnol. Bioeng*. **110**, 417-423.

Roussel, G., Rouse, S.L., Sansom, M.S., Michaux, C., Perpète, E. (2014) The role of 2-methyl-2, 4-pentanediol in sodium dodecyl sulfate micelle dissociation unveiled by dynamic light scattering and molecular dynamics simulations, *Colloids Surf. B Biointerfaces* **114**, 357-362.

Contact

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