

Post doctoral position available from January 2010.

Laboratory: Prof. Francesco Blasi, IFOM (Foundation FIRC Institute of Molecular Oncology), at the IFOM-IEO Campus, Milano, Italy. <http://www.ifom-ieo-campus.it/>

Project. Crystallization and structural analysis of the Prep1-Pbx1-DNA complex.

Prep1 and Pbx1 are homeodomain proteins that interact to bind DNA and affect developmental processes by regulating the expression of Hox genes. Biochemical analysis has established the presence of N-terminal regions in both proteins required for the interaction. On the other hand at the C-termini of both proteins contain the homeodomain that is the actual DNA-binding region.

The interest in solving the structure of the Prep1-Pbx1-DNA complex, in addition, lies in the novelty of the domains involved for which no X-ray structure is available. Moreover, since both Prep1 and Pbx1 belong to a family of proteins, the involved domains are conserved in the other members and therefore modeling will allow to re-construct a series of structures, with potential impact also in terms of drug targets.

State of advancement of the project. The project will capitalize on previous work in which a large number of constructs and vectors has been analyzed, as well as several purification procedures. We are now at a stage in which several different constructs expressing at high level soluble protein complexes have been produced and reliable purification procedures have been established. The work to be done will be to search for suitable crystallization procedures and to solve the X-ray structure. Conservatively, we feel that this can be certainly achieved within two years

Salary. At the IFOM-IEO Campus, post-doctoral salaries rangen within 24000-36000€/yr. Further information as to fringe benefits etc can be found at the Campus web Site.