

## **Testin, a focal adhesion protein: mechanical, structural and dynamical properties**

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### **Summary**

TES (Testin) proteins are involved in cell junction, cytoskeleton reorganization and focal adhesion. They also contribute to inhibit tumor cell growth.

Native TES contains three LIM – type domains located at the C – terminal part of the protein, and a PET domain at N – terminal.

Although some studies have focused on the function of the LIM and PET domains and also their interactions with zyxin and paxilin, very little is known about the three dimensional structure of the TES protein and its mechanical role in cytoskeleton reorganization and cell/substrate interaction.

This project proposes an experimental approach to gain insight about the structure and the mechanical properties of i) the whole TES protein and ii) the different TES domains individually. The project is divided in three main parts: protein engineering, experimental biophysical methods, and bioinformatics.

The project might need multidisciplinary expertise, which will be coped by the working teams at BOKU and NTU. However, other collaborations are expected concerning protein synthesis and molecular simulations inside BOKU, and with well-known international institutions.

The achievement of the project objectives will deliver not only structural information about TES proteins but also important information about its role in cell mechanics and function.