**ICAP-1 : cytoplasmic regulator of osteoblasts response to the mechanical environnement**

Myriam Régent-Kloeckner1, Anne-Pascale Bouin1, Martial Balland2, Alexander Kyumurkov1, Claude Verdier2, Valérie M. Laurent2, Emmanuelle Planus1, Corinne Albiges-Rizo1

1 Institut Albert Bonniot, Inserm/UJF U823, équipe 1 Dynamique de l'adhérence cellulaire et de la différenciation ERL 5284 CNRS, Grenoble (France). 2 Laboratoire Interdisciplinaire de Physique, CNRS/UJF UMR 5588,MOTIV and DYFCOM team, Grenoble (France).

In our previous work we had shown that ICAP-1 loss decreased the sensitivity of cells to the density in extracellular matrix proteins such as fibronectin. We then have the hypothesis of the role of ICAP-1 as mechanical regulator. In this study, we have analyzed and quantified the speed of migration of osteoblasts mutants for ICAP-1 expression on fibronectin coated gel of controlled rigidity. We show that osteoblast migration is regulated by the extracellular rigidity and the loss of ICAP-1 abolishes this dependency. In addition, the loss of ICAP-1 has no significant effect on osteoblasts adhesive properties and traction forces development; nevertheless ICAP-1 appears to be involved in a pathway that regulates cell contractility and that involves the Rho-Kinase (ROCK).