UNIVERSITAT DE BARCELONA

Unit of Biophysics & Bioengineering
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Casanova 143
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PREDOC FELLOWSHIP IN CELL MECHANICS

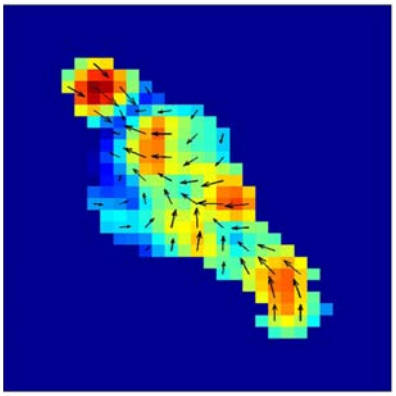
Regenerative medicine is of high scientific and clinical relevance to pneumology because prevalent lung diseases are characterized by pulmonary tissue injury and repair. A major open question is to understand the process of stem cell differentiation onto lung epithelium phenotypes. Recent data suggest that both the mechanical properties of the cell microenvironment and the mechanical stimuli experienced by lung cells play a key role in stem cell differentiation.

AIM: The aim of this predoc project is to investigate the mechanisms regulating stem cell differentiation onto alveolar epithelial phenotype by mechanical stimuli.

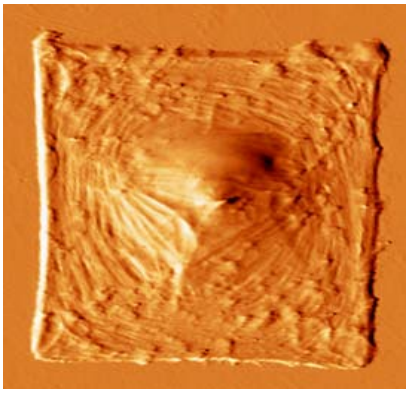
LAB: The Biophysics & Bioengineering lab is equipped with a wide variety of powerful cell mechanics techniques including atomic force microscopy, magnetic tweezers, optical tweezers, micro/nanopatterning and advanced live-cell imaging.

FELLOWSHIP: This is a 4-year fellowship to develop a PhD program. This is a fellowship within the FPI program of the *Ministerio de Ciencia e Innovación*. The fellowship funds are already assigned to a research project funded by the Spanish I+D+I (Research, Development and Innovation) program.

CANDIDATES: Candidates should have a recent Degree or Master in physical sciences (Physics or Engineering) or in biological sciences (Biology, Biochemistry, Pharmacology), or to expect obtaining such a degree by June 2009. Candidates are invited to send a CV and cover letter describing motivation, and names and e-mail addresses of 2-3 referees to Prof. Ramon Farré (rfarre@ub.edu).



Mapping cell contraction by traction microscopy
Gavara et al Biophys J 2008



Regulating cell shape by micropatterning
Roca-Cusachs et al Biophys J 2008