



PRINCIPE FELIPE
CENTRO DE INVESTIGACION

The Future of Biomedical Research Lecture Series

Cell shape and morphogenesis: subcellular and supracellular mechanisms

Speaker: Prof. Maria Leptin

Director of EMBO and Group Leader at EMBL, Heidelberg, Germany.

Date: 28/02/2017 - 10h

Place: Sal3n de Actos CIPF

The shape of a developing organism is generated by the activities of its constituent cells: growth and proliferation, movements and shape changes. We aim to understand how the forces generated by individual cells are integrated within the supracellular organisation of the whole organism to give the tissue its final shape. We study the formation of the ventral furrow in the early *Drosophila* embryo. The epithelial cells that form the furrow are the major force generators driving invagination, but to allow furrow formation, neighbouring cells must respond and they may contribute to the process. To understand force integration across many cell populations, we use simultaneous time-lapse imaging of multiple-angle views of the gastrulating embryo. We measure the specific shape changes in all the cells of the embryo, as well as the speed and direction of their movements. Genetic and mechanical manipulations reveal the underlying control circuits.

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