

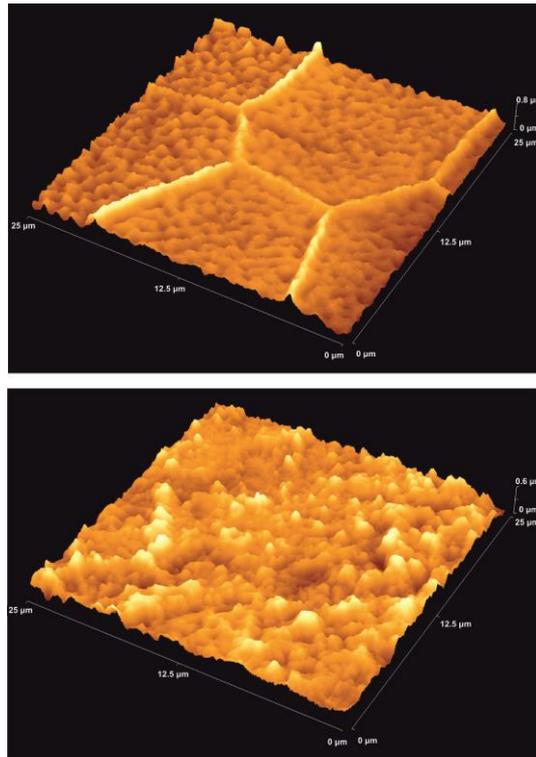
Press Release

The Essential Role of s36 Protein in the Architectural Organization of *Drosophila melanogaster* Chorion

Interdisciplinary studies from groups at the Theoretical and Physical Chemistry Institute (TPCI) in National Hellenic Research Foundation (NHRF), the Section of Cell Biology and Biophysics in Department of Biology, School of Science, National and Kapodistrian University of Athens (NKUA), the Proteomics Core Facility, Systems Biology Center in Biomedical Research Foundation of the Academy of Athens (BRFAA), and the Laboratory of Experimental Physiology in Medical School, National and Kapodistrian University of Athens (NKUA), unveil the essential contribution of s36 protein in the assembly and architecture of *Drosophila* chorion.

Drosophila chorion represents a model biological system for the in vivo study of gene activity, epithelial development, extracellular-matrix assembly and morphogenetic-patterning control. It is produced during the late stages of oogenesis by epithelial follicle cells and develops into a highly organized multi-layered structure that exhibits regional specialization and radial complexity. Among the six major proteins involved in chorion's formation, the s36 and s38 ones are synthesized first and regulated in a cell type-specific and developmental stage-dependent manner.

In our study, an RNAi-mediated silencing of s36 chorionic-gene expression specifically in the follicle-cell compartment of *Drosophila* ovary unearths the essential, and far from redundant, role of s36 protein in patterning establishment of chorion's regional specialization and radial complexity. Without perturbing the developmental courses of follicle- and nurse-cell clusters, the absence of s36 not only promotes chorion's fragility but also induces severe structural irregularities on chorion's surface and entirely impairs fly's fertility.



Moreover, we herein unveil a novel function of s36 chorionic protein in the regulation of number and morphogenetic integrity of dorsal appendages in follicles sporadically undergoing aged fly-dependent stress.

Article Reference:

“Targeted Downregulation of s36 Protein Unearths its Cardinal Role in Chorion Biogenesis and Architecture during *Drosophila melanogaster* Oogenesis”

A.D. Velentzas, P.D. Velentzas, N.E. Sagioglou, E.G. Konstantakou, A.K. Anagnostopoulos, M. M. Tsioka, V.E. Mpakou, Z. Kollia, C. Consoulas, L.H. Margaritis, I.S. Papassideri, G. Th. Tsangaris, E. Sarantopoulou, A.C. Cefalas & D.J. Stravopodis.

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Contact for NHRF:

Dr. Evangelia Sarantopoulou – email: esarant@eie.gr / Tel.: + 30 210 7273839

Theoretical and Physical Chemistry Institute,

National Hellenic Research Foundation

48 Vassileos Constantinou Avenue, 11635 Athens, Greece.