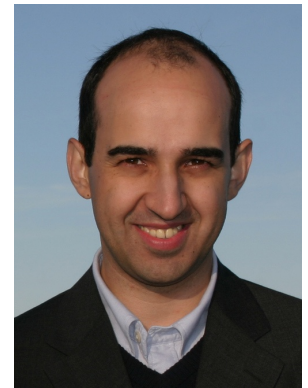


## BioSys/BioISI Research Seminar

### Molecular Mechanisms of Melanin Transfer Between Melanocytes and Keratinocytes

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The “Epidermal-Melanin Unit” comprises the functional complex in which melanocytes and keratinocytes co-operate in a synergistic fashion to maintain skin pigmentation. The transfer of specialized lysosome-related organelles, called melanosomes, from donor melanocytes to recipient keratinocytes and subsequent redistribution to the supra-nuclear area is a critical process in skin pigmentation and photo-protection against ultra-violet damage. However, the molecular mechanism underlying intercellular transfer of melanin remains controversial.

Using co-cultures of melanocytes and keratinocytes we found that keratinocytes stimulate melanin release and transfer, and that depletion of the small GTPase Rab11b or its effector the exocyst leads to a decrease in melanin exocytosis. To further investigate the melanin transfer process, we used keratinocytes fed with melanosomes and found that melanin is taken up by keratinocytes and accumulates in lysosome-like structures that resemble the physiological supra-nuclear cap observed in human skin.

Taken together, our observations suggest that the predominant mechanism of melanin transfer is keratinocyte-induced exocytosis in a Rab11b/exocyst-dependent manner, followed by endocytosis by keratinocytes.

**Date: 5<sup>th</sup> July 2016 – 11h30**

Faculdade de Ciências da UL, Lisboa (Portugal), Building C1 – room 1.3.15