

DSV 2018 Seminars



UNIVERSITÀ
DEGLI STUDI DI TRIESTE



DIPARTIMENTO DI
SCIENZE DELLA VITA

PhD Program in Molecular Biomedicine

Friday, 14 September 2018 - 9:30

Seminar room, I floor, Q Building – Via Giorgieri 5

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Organelle communication regulates EGFR endocytosis and signaling output

The integration of distinct endocytic routes is critical to regulate receptor signaling. At high dose of ligand, Epidermal Growth Factor Receptor (EGFR) is internalized through non-clathrin endocytosis (NCE), in addition to clathrin-mediated endocytosis (CME). Importantly, while CME mainly results in EGFR recycling and signaling, NCE targets the majority of the receptors to degradation, thus restricting EGFR signaling in condition of high ligand availability. Mechanistically, NCE relies on the formation of contact sites induced by EGFR activation between the endoplasmic reticulum (ER) and the plasma membrane (PM), which serve as spots of localized Ca^{2+} signaling. Thus, communication between different cellular compartments - including PM, ER and mitochondria - has a critical impact on EGFR fate and EGF-dependent cell response.

