



Institute colloquium

The Institute Colloquium: Role of lateral compression of ESCRT spiral springs in memb

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Host:

ESCRT-III is required for lipid membrane remodeling in many cellular processes, from abscission to viral budding and multi-vesicular body biogenesis. However, how ESCRT-III polymerization generates membrane curvature remains debated. Here we show that Snf7, the main component of ESCRT-III, polymerizes into spirals at the surface of lipid bilayers. When covering the entire membrane surface, these spirals stopped growing when densely packed: they had a polygonal shape, suggesting that lateral compression could deform them. We reasoned that Snf7 spirals could function as spiral springs. By measuring the polymerization energy and the rigidity of Snf7 filaments, we showed that they were deformed while growing in a confined area. Furthermore, we observed that the elastic expansion of compressed Snf7 spirals generated an area difference between the two sides of the membrane and thus curvature. This spring-like activity underlies the driving force by which ESCRT-III could mediate membrane deformation and fission.

Monday, March 9, 2015 04:30pm - 05:30pm

Raiffeisen Lecture Hall, Central Building



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

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