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MPI-NAT SEMINAR SERIES

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Length matters: cell-fate determination by ubiquitin chain length control

All metazoans utilize differently linked ubiquitin chains to translate signals into appropriate cellular responses, but how chain length is controlled to enable organismal development is unclear. Hypomorphic hemizygous missense mutations in the deubiquitylase OTUD5 cause a multiple birth defects syndrome we have named LINKED (LINKage-specific-deubiquitylation-deficiency induced Embryonic Defects) syndrome. By studying these mutations, we previously uncovered an essential function of OTUD5 in cleaving K48-linked ubiquitin chains off a select group of chromatin remodeler substrates to coordinate chromatin dynamics during neuroectodermal differentiation. Here, I will discuss our latest findings on the molecular mechanism of OTUD5-dependent K48-linked ubiquitin chain cleavage and their implications for chain length in ubiquitin signaling during embryonic development.

Tuesday, 16.07.2024, 4:00 pm

Host: Sonja Lorenz



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