
Regular Wednesday IMG seminar



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**“Regulation of microtubule nucleation in response
to ER stress”**

Endoplasmic reticulum (ER) distribution depends on microtubules, and ER homeostasis disturbance activates the unfolded protein response resulting in ER remodeling. CDK5RAP3 (C53) implicated in various signaling pathways is stabilized with UFM1-protein ligase 1 (UFL1), which mediates protein ubiquitination in response to ER stress.

In this talk, I will show that C53 associated with centrosomes regulates microtubules in response to ER stress. Knockout of C53 or UFL1 or treatment with tunicamycin in human osteosarcoma cells induces ER stress and promotes centrosomal microtubule nucleation accompanied by γ -tubulin accumulation, microtubule formation, and ER expansion. C53 rescues microtubule nucleation in cells lacking UFL1. Interaction of ER membranes with newly formed microtubules could promote expansion of ER and contribute to restoration of ER homeostasis. These findings point to a novel mechanism for alleviating ER stress by stimulating centrosomal microtubule nucleation.

The seminar will be held

on Wednesday 23rd March 2022 at 15:00

in the Milan Hašek Auditorium at IMG

(Institute of Molecular Genetics of the Czech Academy of Sciences, Vídeňská 1083, Prague 4)
