

SESSION 4: DYNAMIC OF CELL COMPARTMENTS AND ITS PATHOLOGICAL IMPLICATIONS

P040

PTTG1/SECURIN MODULATES MICROTUBULE NUCLEATION AND CELL MIGRATION

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Pituitary tumour transforming gene 1 (PTTG1), also known as securin has been involved in many biological functions including inhibition of sister chromatid separation, DNA repair, organ development, and in regulating the expression and secretion of angiogenic and metastatic factors. Although most of these functions of the securin seem to be dependent on the localisation of PTTG1 in the nucleus of the cell, a fraction of the protein has been also detected in the cytoplasm. Here, we demonstrate that, in different cell types, a portion of cytoplasmic PTTG1 is associated with the cis-face of the Golgi apparatus and that this localisation depends on PTTG1 phosphorylation status. In this organelle, PTTG1 is forming a complex with proteins involved in microtubule nucleation including GM130, AKAP450 and β -tubulin. RNA interference-mediated depletion of PTTG1 produced a delay in centrosomal and noncentrosomal microtubule nucleation. Cells lacking PTTG1 showed severe defects in both cell polarization and migration in wound-healing assays. To our knowledge, this is the first study reporting the role of PTTG1 in microtubule nucleation and cell polarization, two processes directly involved in cell migration. We believe that these findings will contribute to understand the mechanisms underlying PTTG1-mediated biological functions.