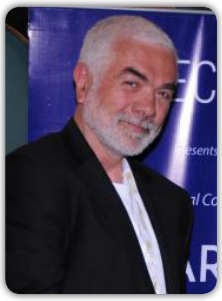

Claude Prigent

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The mitotic kinase Aurora kinase A localises to mitochondria to control organelle dynamics and energy production: Implication for cancer cells overexpressing Aurora-A

Many epithelial cancers show cell cycle dysfunction tightly correlated with the overexpression of the serine/threonine kinase Aurora A (AURKA). Its role in mitotic progression has been extensively characterised, and evidence for new AURKA functions emerges. Here, we reveal that AURKA is located and imported in mitochondria in several human cancer cell lines. Mitochondrial AURKA impacts on two organelle functions: mitochondrial dynamics and energy production. When AURKA is expressed at endogenous levels during interphase, it induces mitochondrial fragmentation independently from RALA. Conversely, AURKA enhances mitochondrial fusion and ATP production when it is over-expressed. We demonstrate that AURKA directly regulates mitochondrial functions and that AURKA over-expression promotes metabolic reprogramming by increasing mitochondrial interconnectivity. Our work paves the way to anti-cancer therapeutics based on the simultaneous targeting of mitochondrial functions and AURKA inhibition.

Speaker Biography

Claude Prigent is a Director of Research CNRS and Head of the Cell Cycle team, IGDR. He has been elected as an Associate Professor at the University Laval, Quebec, Canada. After completing his Post-doc in the DNA repair filed under the direction of Thomas Lindahl at the ICRF in London he has been working on mitosis trying to understand how this cell cycle stage was control by phosphorylation. He focused his activity on the Aurora-A kinase and cancer.

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