



FACULTY OF SCIENCE
Charles University

School of Chemistry, Faculty of Science,
Charles University invites for the lecture

Quo Vadis Chemie

HALF-SANDWICH IRIDIUM(III) COMPLEXES WITH CYTOTOXIC PROPERTIES: SYNTHESIS, BIOLOGICAL STUDIES, CELL IMAGING AND PROTEIN TARGETS IDENTIFICATION BY CHEMICAL PROTEOMICS



which will be delivered by

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on March 20, 2023 at 15:00

the Lecture Hall CH2 at the School of Chemistry, Faculty of Science, Hlavova 2030

Non-platinum complexes are currently raising a broad interest as anticancer drug candidates as they may display mechanisms of action that differ from cisplatin and oxaliplatin. Half-sandwich iridium(III) complexes including various coligands are investigated to this purpose but their mode of action is still poorly understood. In this line, we first prepared and investigated a library of Ir complexes featuring C^N phenyloxazoline ligands to perform a structure-activity relationship study. *In vitro*, all complexes catalyzed the oxidation of the coenzyme NADH to NAD but only a subset produced a detectable amount of H₂O₂. *In vivo*, most complexes raised the intracellular level of H₂O₂, which may explain their cytotoxicity to HeLa cells. Next, a BODIPY fluorescent reporter group was appended to one of the phenyloxazoline ligands and the complex efficiently tracked within cells. Finally, we applied a chemical proteomics approach to identify the protein targets.

