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Use of MALDI-TOF for the characterization of metallothionein in biological systems



Laboratoř Metalomiky a Nanotechnologií

Vás zve na seminář k projektu ID 113:

## **MALDI-TOF Mass Spectrometry: A novel technology for identification and characterization Metallothionein in cancer tumor**

***Miguel Angel Merlos Rodrigo***

### **Abstrakt**

Metallothioneins (MTs) are intracellular, low molecular weight and cysteine-rich proteins. The expression and induction of these proteins have been associated with protection against DNA damage, oxidative stress and apoptosis. Importantly, it has been reported that MTs play a role in oncogenesis and cancer prognosis, and are implicated in resistance of cancer cells to anticancer metallodrug in mammalian cells. Recent developments in mass spectrometry have brought clinical proteomics to the forefront of cancer diagnosis and treatment, offering reliable, robust and efficient analysis methods for biomarker discovery and monitoring, Matrix-Assisted Laser Desorption/Ionization-Time Of Flight (MALDI-TOF) mass spectrometry has been proven to be an effective tool not only for determination of MTs in biological samples, but also for the identification of its isoforms in various types of samples. In this seminar, we review and evaluate MTs profiling technique as a tool to detect cancer biomarker and discuss recent advances in this approach and do keep track on the methodology for the preparation of samples and the conditions measurements of MALDI-TOF for the identification of MTs in cancerous tissue.

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