

Laboratoř Metalomiky a Nanotechnologií

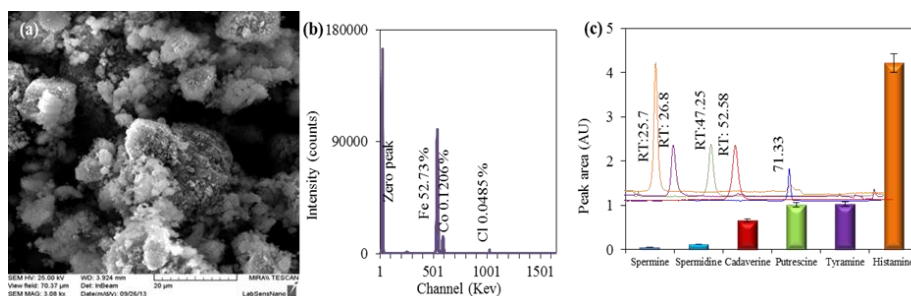
Vás zve na seminář k projektu ID 190:

Testing the binding capacity of the particles for isolation of Histamine, Tyramine, Putrescine

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Abstrakt

This study aims at the possibility of single structured paramagnetic microparticles (PMPs), composed of maghemite ($\gamma\text{-Fe}_2\text{O}_3$) core modified with chitosan called MAN8, to be helpful for isolation of biogenic amines prior to their further analysis. Primarily, we synthesized and characterized PMPs. To obtain the information about beads morphology we used scanning electron microscopy (SEM). Further, X-ray fluorescence (XRF) was employed to carry out the elemental composition analyses. To obtain further insight into interaction between PMPs surface and biogenic amines, scanning electrochemical microscope was employed. It was



shown that binding of biogenic amines causes increase of relative current response of deprotonated microparticles. The specificity of PMPs to bind biogenic

amines we tested on histamine, tyramine, spermine, spermidine, putrescine, and cadaverine. We found that type of our PMPs were able to bind selectively histamine, tyramine, and putrescine in the case of MAN8. The prepared PMPs were able to isolate the biogenic amines from real sample, and thus they may be helpful in construction of biosensors, or Lab-on-a-Chip platforms, enabling the prostate cancer diagnosis less painful, and more rapid.

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