

Ferrocene modification of protein imprinted MIP films

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Molecularly imprinted polymers (MIPs) are bio-mimicking recognizing materials used for sensors fabrication [1, 2]. Analytical parameters of these chemosensors, such as sensitivity, selectivity, and detectability, are almost as high as those of biosensors. MIP-based chemosensors are superior concerning their ease of fabrication, durability, and tolerance to harsh experimental conditions, including elevated or decreased temperature, high ionic strength, extreme pH values, the presence of heavy metal ions and organic solvents. Therefore, MIP-based chemosensors found numerous applications in environmental analysis [3], food quality control [4] and clinical analysis [5].

For the electrochemical determination of non-electroactive analytes, some external redox probe is usually added to the test solution [6, 7]. In our previous works we have proven that it is possible to immobilize redox probe inside of the MIPs' polymer matrix by co-polymerization of monomers containing ferrocene groups [8, 9]. These sensors enabled label-free sensitive determination of target analytes. Herein, ferrocene moieties were introduced to MIP molecular cavities via post-imprinting modification [10]. Obtained redox active MIPs' were characterized with scanning electrochemical microscopy and capacitive impedimetry.

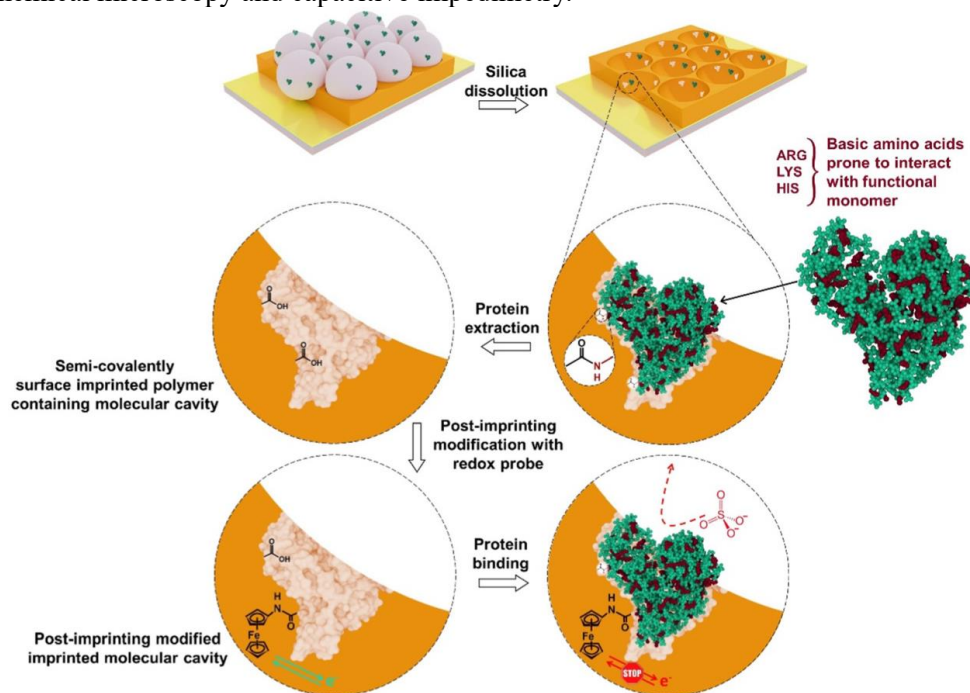


Figure 1: Fabrication of ferrocene modified MIP.

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References

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