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Stereoselective bionanocatalysis on gold nanoparticles

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Among different nanomaterials, gold nanoparticles are especially interesting for biocatalysis because of great affinity of gold to thiols and amino groups, which are present in enzymes. Such interactions may cause changes in a structure of an enzyme and modify its substrate specificity. In literature, there is no information about influence of gold nanoparticles on enzyme stereoselectivity. Therefore systematic studies were performed to verify this phenomenon. Selected enzymes were immobilized on gold nanoparticles using different protocols. Obtained bionanocatalysts were used in a model stereoselective reaction. The influence of bionanocatalysts structure on the stereochemical course of the reaction studied will be discussed.

Biography

Ryszard Ostaszewski has completed his PhD at Institute of Organic Chemistry Polish Academy of Sciences in 1989 and Postdoctoral studies from University of Twente, the Netherlands and from University of Zurich, Switzerland. He is a Professor of the Institute of Organic Chemistry since 2009. He received the award for the Young Chemist from the Polish Chemical Society 1989. He is the author of over 85 publications in peer-reviewed journals and more than 50 communications in international conferences and symposium.

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