

Molecular Biotechnology Programme

Uppsala University School of Engineering

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Title (English)	
Enantiomeric study using a QCM-D with nanoparticles	
functionalised on the sensor surface	
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Title (Swedish)	
Abstract	
Interactions between purified enantiomers of chiral drugs and human serum proteins were	
used as models to investigate the use of the QCM-D technique for enantiomeric studies. In	
order to increase the sensitivity of the QCM-D, the sensor crystal was functionalised with	
nanoparticles and reached the monolayer coverage of 80 %. There is evidence that the	
increased resolution was able to resolve differences in enantiomeric affinity of the S-form of	
propranolol compared to the R-form binding to α_1 -acid glycoprotein.	
Keywords	
QCM-D, enantiomer, nanoparticles, biosensor, drug-protein interaction, chiral, DMSO	
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