

DNA microarray is a well-established technology for gene expression profiling throughout biological research and clinical diagnostics. However, the development of comparable technologies on protein level has turned out to be complicated by the distinct nature of individual protein molecules. Here, we suggest the use of structurally uniform recombinant antibody molecules as catcher molecules for protein analytes. In the scope of this thesis, the catcher molecule has been discussed in terms of sensitivity of detection, on-chip stability and the format antibody-molecules can be spotted onto the solid support. At the same time, different carriers have been evaluated with regard to their structure (1-, 2- or 3-dimensional) and coupling chemistries (adsorption, covalent coupling or affinity coupling). Thus, this thesis provides important technological insights, of use for anyone intending to perform protein profiling in large scale and high throughput manner.

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Cornelia Steinhauer studied Biology and Biochemistry in Bonn and Potsdam (Germany) receiving her degree (Diplom Biochemist) in 2000. 2001 she moved to Denmark/Sweden in order to perform her PhD studies on the establishment of antibody based microarrays at the Technical University Lund (LTH), Sweden, where she graduated in 2005.



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