

A paradigm shift in the identification, characterization and sorting of cells



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CellTool's analytical platforms enable physicians, pharmacists and biologists to exploit the potential of Raman spectroscopy for biomedical applications. Just like 'photonic fingerprinting', Raman spectroscopy provides specific information about the overall chemical composition of the specimen. It enables reliable identification of different cell types, discrimination of cell phase and even monitoring of stem cell differentiation without any biochemical labelling such as antibody-based markers or fluorescence molecules. Using the Raman microscope BioRam[®], single cells are analyzed non-invasively and without the need for stains or labels. Only about 100 cells are sufficient for a complete analysis, which takes less than an hour. Cells are not affected at all, thus remaining available for further use. The scope of application and all of these analytical data will be presented and opened to discussion.

Dr Karin Schütze is a biologist and expert in non-contact cell handling, characterization and enrichment based on innovative photonic technologies. She was the cofounder and head of the former PALM company with emphasis on laser microdissection and catapulting (PALM MicroBeam), that was successfully sold to Carl ZEISS in 2004. In 2008, she and her husband founded CellTool GmbH that is developing and marketing innovative confocal Raman trapping microscope systems for label-free cell analysis. Her expertise is in developing complex photonic systems into easy to handle tools for biomedical applications. At CellTool, she is in charge of product development as well as CellTool's Application Laboratory. Further responsibilities include dissemination and publishing of Raman results in scientific articles. She has more than 80 publications and about 28 patents. Together with her husband, they received several awards, such as the Berthold Leibinger Innovation price and the nomination for the German Presidents "Zukunftpreis" in 2006.