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## Electrochemical Assay of Specific Biological Compounds Using Scanning Electrochemical Microscopy

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Poster Presentation P33

**ELECTROCHEMICAL ASSAY OF SPECIFIC BIOLOGICAL COMPOUNDS USING  
SCANNING ELECTROCHEMICAL MICROSCOPY**

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Scanning Electrochemical Microscopy (SECM) is a useful tool for analysis of biological samples because it is capable of detecting both the topography of the cell surface as well as release of electrochemically active compounds. A fabricated ultramicroelectrode controlled by the SECM was used to scan across the cell surface at a constant distance. The constant distance from the cell was maintained by using a feedback loop that measured the impedance between the tip of the electrode and the reference electrode. Because the topography of the cell could be determined by recording the movement of the electrode in response to impedance measurements, the potential of the electrode could be set to measure specific oxidations or reductions occurring at the cell surface. The SECM has been used to successfully combine characterization of cell topography with simultaneous electrochemical evaluation of the cell surface. Release of electrochemically active compounds from the cell surface has been detected by changes in the current measured at the tip of the ultramicroelectrode. The goal of this project is to develop an electrochemical assay to detect specific molecules on the cell surface using the SECM.