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PERCUTANEOUS BIOLOGICAL FLUID CONSTITUENT SAMPLING AND MEASUREMENT DEVICES AND METHODS

Abstract of the Disclosure

A device for sampling at least one biological fluid constituent and measuring at least one target constituent within the biological fluid. The device has at least one micro-needle having an open distal end used to penetrate the skin to a depth where pain and bleeding are minimized. The device further includes a hydrophilic gel within the micro-needle for sampling the biological fluid constituents and an electrochemical cell for measuring the concentration of targeted constituents within the sampled biological fluid constituents. In certain embodiments, the electrochemical cell is integrated within the micro-needle whereby the steps of sampling and measuring are performed completely in-situ. In other embodiments, the electrochemical cell is located external to the micro-needle at its proximal end. Constituent sampling and measurement systems, methods and kits are also provided.

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