



Comparison of urinary hormone measurements between novel giant magnetoresistive (GMR) biosensor and conventional enzyme immunoassay (EIA)

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Abstract:

Introduction: Ovulatory disorders, such as Polycystic Ovarian Syndrome are a common cause of infertility in women. The hormones relevant to ovulatory disorder diagnosis are present in healthy women and the concentration of these hormones in urine varies throughout the menstrual cycle, over the course of a woman's life, and are affected by a variety of other lifestyle and medical factors. **Objective:** Characterize the performance of a portable giant magnetoresistive (GMR) biosensor in measuring the concentration of several urinary hormones related to ovulatory disorders in women. **Participants:** 5 women participated over the course of 28 days. **Methods:** Participants provided a brief medical and menstrual history upon enrollement into the study. Over the course of the study, the concentrations of lutenizing hormone (LH) and pregnanediol-3-glucuronide (PDG) in first morning urine were measured by prototype GMR platforms and commercially available EIA. Urinalysis, creatinine measurements and biotin concentrations were also gathered on each sample. **Results:** forethcoming.



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Conclusions: GMR biosensor offers a promising method for quantitative measurement of LH in point of care format. Further assay development is indicated, especially for PDG. Biotin in urine, presumably from supplementattion appears to affect performance of GMR assay utilizing biotinylated antibodies.

Biography:

TRAVIS W. MCCAIN, MS is Chief Product Officer of Flux Biosciences, Inc. USA. In June, 2021 he will confirm both MD and MBA degrees from Dartmouth College, USA. He holds an MSc in Cellular and Integrative Physiology from Indiana University, USA and BSc in Engineering, Product Design from Stanford University, USA.