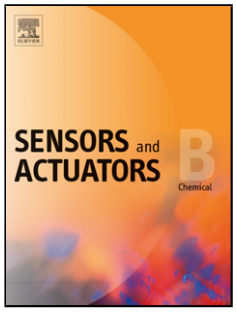

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Clinical Identification of Diabetic Ketosis / Diabetic Ketoacidosis Acid by Electrochemical Dual Channel Test Strip with Medical Smartphone

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Abstract

The traditional design of enzymatic test strip has single electrochemical reaction, which can only measure one single biochemical parameter. We present one disposable electrochemical test strip with dual enzymatic reaction channel which is capable of simultaneously measuring glucose and blood ketone by one fingertip whole blood drop for clinical identification of diabetic ketosis (DK) and diabetic ketoacidosis (DKA). The blood glucose was measured in the 1st channel while blood ketone was measured in the 2th channel. The proposed test strip fulfils the rigid demand for diabetic patients with DK/DKA without double pricking the finger to determine the blood glucose and blood ketone, respectively. The results of clinical identification of diabetic ketoacidosis by the proposed test strip was verified by the clinical test with good consistency. The proposed test strip provides a cost effective and fast solution for clinical point of care identification of diabetic ketoacidosis.