Patent Search

Invention Title	A NON-INVASIVE, REAL-TIME ELECTROCHEMICAL MONITOR FOR HEMOPHILIA A&B AND METHOD THEREOF
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Abstract:

The present invention describes a non-invasive, real-time electrochemical monitor for Hemophilia A&B and method thereof. In the present invention, the cyanuric acid derived, nitrogen enriched CNS for developing a biosensing platform for a facile and precise detection of thrombin, HA and HB blood factors together. Since, nitrogen rich carbon materials have been established as highly biocompatible materials, they would not interfere with the biochemical and morphological parameters of the blood and would be non toxic in nature. Moreover, a singular, biocompatible platform for concurrent detection of both types of haemophilia also establishes the biosensor as a more cost-effective and efficient biosensor. Consequently, with a shift in focus towards phenotypic and non-invasive screening, our carbon-based platform for electrochemical sensing would not only improve the detection specificity, thereby making them a favourable choice; rather, it would also enhance the limit of detection (LOD), thereby making high-resolution, non-invasive and real-time diagnosis a dream come true. Accompanied Drawings [FIG.1-4]

Complete Specification

DESC:FIELD OF INVENTION:
This invention generally relates to the field of the non-invasive, real-time electrochemical monitor for Hemophilia A&B and method thereof, and more particularly relates to a non-invasive, real-time electrochemical monitor for Hemophilia A&B, NCNS functionalized multi-aptamer for simultaneous, real-time, electrochemical determination of thrombin, FIX and FVIII.
BACKGROUND OF THE INVENTION
Hemophilia A (HA) and B (HB) are rare bleeding disorders with mutations in genes for F-VIII and F-IX, respectively and low thrombin levels. All the current sensors that are being explored for the detection of thrombin, F-VIII and F-IX require large blood samples, are cost-intensive, hard to scale-up and toxic in nature Additionally, there are no sensors which can simultaneously determine all three blood factors.
There are few references made to the present invention as given below:
WO2001063271A1 discloses a dry chemical based electrochemical sensor for determining blood clotting. The inventive sensor comprises at least 2 electrodes on an inert support, in addition to a dry reagent. The invention is characterized in that the reagent contains a thrombin substitute consisting of a peptide radical which can be cleaved off from thrombin and which is amidically linked to a phenylenediamine radical by the carboxyl end thereof. The invention also relates to a system for measuring blood clotting, comprising one such sensor and a current measurment device. The invention further relates to a method for determining blood clotting with the aid of the inventive sensor and a reagent for determining blood clotting, comprising a thrombin substitute consisting of a peptide radical which can be cleaved off from thrombin and is which is amidically linked to a phenylenediamine radical by the carboxyl end thereof. Said reagent is characterized that it also contains a dye oxidoreductase, such as

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