

MASS SPECTROMETRY: CLINICAL ARTIFICIAL INTELLIGENCE APPLICATION USING HYPOTHETICALLY GENERATED DATA

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Erythrocytes dynamic antigens store (EDAS) is a new discovery. In patients with infectious diseases, malignancies, Alzheimer's disease, and idiopathic disorders, EDAS contains antigens related to those disorders. Storing EDAS of patients in a database has, at least, two benefits. First, it can be queried with EDAS of a patient presenting with the unknown disorder to diagnose his condition. Second, it can be mined to determine biomarkers, which can be used in developing a new line of clinical laboratory kits. We show how this approach can be implemented using hypothetically created EDAS. The mathematical model of hypothetical EDAS together with software tools for biomarker discovery and direct diagnosis are described. The different possibilities that may occur in reality are experimented. We found that the tool can identify biomarkers' proteins for pathogens and malignancies. Also, the tool can take EDAS of a case, as an input, to reach to

a diagnosis. In effect, the tool can be used to diagnose quickly conditions that may be difficult or take longer time and effort to diagnose by conventional methods. The presented tool can be used in clinics to diagnose disease disorders. This work is done as an initial step to study different possibilities and situations to be prepared for using real big data.

Biography

Mahmoud Rafea is working in Central Lab of Agriculture Expert Systems, Egypt. Initially, he is a Medical Doctor. He has a double qualification in Clinical Pathology and Computer Science. He worked as a Researcher in Artificial Intelligence (AI). He was promoted by his institution (ARC) to a Professor of Computer Science. Currently, he is working on medical R&D using his AI and medical knowledge.

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