Nova Psychiatric Services

Computer-Aided Drug Resistnace Calculator: A Rational and Rapid Point of Care Diagnostic Device

We have earlier invented a rational and rapid point-of-care diagnostic device called Computer Aided Drug Resistance Calculator (CADRC). Patent Publication for this device has been made and application is still in progress. It has been identified that variations in the physio-chemical and structural properties (phenotypic characteristics) of the target proteins of drugs that result in drug resistance also translate into alterations in the amino acid sequences or mutations (genotypic features). CADRC engages a Digital Signal Processing (DSP) technique called Information Spectrum Method (ISM) to translate these genotypic features of protein targets of drug back to phenotypic characteristics using all the Amino Acid Scales (AAS) involved. These phenotypic attributes (in this case, drug resistance) presented as numerical sequences (signals) are further processed and quantified using Discrete Fourier Transform (DFT). CADRC uses computer algorithm to immediately deliver drug resistance and in numerical terms, enabling the healthcare provider-use to quickly make informed decision on appropriate antibiotic of use. In this presentation, we propose that the CADRC's algorithm be centrally located for quality control monitoring, upgrade and update while the healthcare service providers will be afforded, through their Internet-enabled phones, office computers etc., opportunity to deposit and process sequences derived from their samples and also retrieve calculated resistance. Fluconazole-resistant candida albican is used to demonstrate the functioning of the CADRC. CADRC is employable on all drugs as they are known to be either proteins, have protein targets or proteins encoding them. In this submission, a rational, highly sensitive, reliable and rapid point-of-care diagnostic device called CADRC, which is effective in tackling the emerging antimicrobial resistance is presented. The procedure engaged has earlier fetched us another International Award-Innocentive Award Winning Solver for "Assessing Vaccine Potency" (ID:9933477).