

# American Center for Calculation of Biological Functionalities

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## Description

Bio-functionalities including disease characteristics are known to be associated with protein sequence alterations (mutations). As a result, determination of disease processes and progression (pathogenesis), and provision of biomedical devices through calculating and analysing these functionalities have become the most vital and rational procedure to understanding and managing them. Engaging computerized bioinformatics procedures such as the Digital Signal Processing (DSP)-based technique called Informational Spectrum Method (ISM) therefore remains a better approach. Using ISM, we have earlier demonstrated HIV/SIV pathogenesis, investigated their evolutionary roadmaps, predicted their tropism, designed biomedical devices and assessed resistance offered to several classes of drugs [1]. More investigations are required in other areas like Cancer, Autism, etc. Additionally, more devices need be developed. Aim: The aim of this submission is to recommend a computerized bioinformatics-based Center for calculating biological functionalities for purposes of multidisciplinary investigations, and designing of biomedical devices. Methods: Recommended procedures for this Center for the Calculation of Bio-functionalities will include Digital Signal Processing (DSP)-based techniques such as Informational Spectrum Method (ISM), and Resonant Recognition Method (RRM). Results: Preliminary investigations using the recommended procedures have been found to be fruitful [2]. Over 1000 proteins of HIV, HSP, TNF, Plasmodium, Ebola, and others have been investigated using these procedures. This has resulted in the designing of drugs, vaccines, their candidates, free online tools and biomedical devices such as ComputerAided Drug Resistance Calculator. Discussions: To effectively carry out these investigations, which employ both vast deposits of sequence information and computerized bioinformatics-based techniques, teamwork hence a Center is

required. Conclusions: The Center is envisioned to provide multidisciplinary, rational, more accurate and quantifiable bioassessments. Appropriate engagement of all sequences and Amino Acid Scales is required in order to obtain accurate results. Keywords Bio-functionalities; Bioinformatics Computerized; Digital Signal Processing; Informational Spectrum Method [3].

## Reference

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