# In Silico Analysis of Single Nucleotide Polymorphisms (SNPs) of Three Isoforms of Human Nitric Oxide Synthase (nNOS, iNOS, eNOS) Genes

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**Abstract:**

The three isoforms of Nitric Oxide Synthase (NOS) synthesize free radical nitric oxide (NO), which has numerous protein targets in human body. Several vital processes are regulated and/or mediated by NO in nervous, immune and cardiovascular systems. Hence, alteration on NO level leads to pathological conditions in particular cells or tissues. Prior to conduction population genetic research, listing and identifying the most deleterious SNPs that may have strong relation with a particular disease is crucial. Hence, the aim of this study was to determine the functional non-synonymous Single Nucleotide Polymorphisms (nsSNPs) with emphasis on the exon regions for the neuronal, Inducible and Endothelial Nitric Oxide (nNOS, iNOS, eNOS) genes. Data from dbSNP database were functionally and structurally analyzed using different bioinformatics softwares. In the exon region, 222 SNP (from total 5293), 203 SNPs (from 1441) and 195 SNP (from 782) in nNOS, iNOS and eNOS, respectively were analyzed. Results of SIFT and PolyPhen predicted six SNPs in nNOS, iNOS, and seven SNPs in eNOS genes as damaging.

**Recent Publications** (minimum 5)

1-Computational and bioinformatics analysis of the three isoforms of NOS genes and wrote paper with the tittle, In silico Analysis of single nucleotide polymorphisms (SNPs) of three isoforms of human nitric oxide synthase (nNOS, iNOS, eNOS) genes (published in London journal Press 2019) LJP Copyright ID: 975735 Print ISSN: 2514-863X Online ISSN: 2514-8648

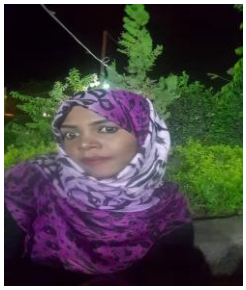
2- Computational Analysis of Functional Coding/Noncoding Single Nucleotide Polymorphisms (SNPs/Indels) in Human *NEUROG1* gene (published in the abstract book of the first young African scientist conference of genomic and human health in Africa 2018)

3 -I participated in the research paper title Tutors: The Valuable Resource to Enhance Medical Students' Motivation DOI: 10.18502/sjms.v13i3.2957 https://www.researchgate.net/publication/327861257

4-I participated on bioinformatics analysis of the hall genome of patients and wrote the paper with the tittle -New mutation found within OTOR gene involved in deafness in two Sudanese families from Al-Jazirah state- Sudan: using Next Generation Sequencing (NGS) Pub. 13 December 2014( Published in 2014) link below http://biogenetics.aizeonpublishers.net/content/2014/6/biogen46-50.pdf

5- Computational analysis of deleterious nsSNPs within HLA-DRB1 and HLA-DQB1 genes responsible for Allograft rejection (published on 2014) http://bioinfo.aizeonpublishers.net/content/2014/6/bioinfo562-577.pdf

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**Biography:** ( 148 words)

- A Sudansese girl reside in Sudan born in 1990, work as Medical doctor , Has a master's degree in medical biochemistry and recently joined medical doctorate programme of clincal pathology at Khartoum University. Has over 4 year experience in clinical, teaching; biostatistics and research methodology,doing research in life science using different molecular techniques, bioinformatics and Computational analysis with strong focus and interest to figure out the root cause of diseases that affect brain, behavior and metabolism. passionate about integrative neuroscience and translation medicine, curious to find an innovative approach to treat neurological and metabolic diseases and provide smart health care service to improve quality of life of the patients by using advance biofeedback tecknology and an integrative approach .very good team player, work comfortably under pressure, adapt to new situation and systems. Have an interest in learning different languages. Have excellent communication skills. Fluent in Arabic and English

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