

Association of Non Synonymous SNP in DC-SIGN Receptor Gene with Tuberculosis (Tb)

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Abstract : Mycobacterium tuberculosis is a communicable chronic illness. This disease is being highly focused by researchers as it is present approximately in one third of world population either in active or latent form. The genetic makeup of a person plays an important part in producing immunity against disease. And one important factor association is single nucleotide polymorphism of relevant gene. In this study, we have studied association between single nucleotide polymorphism of CD-209 gene (encode DC-SIGN receptor) and patients of tuberculosis. Dry lab (in silico) and wet lab (RFLP) analysis have been carried out. GWAS catalogue and GEO database have been searched to find out previous association data. No association study has been found related to CD-209 nsSNPs but role of CD-209 in pulmonary tuberculosis have been addressed in GEO database. Therefore, CD-209 has been selected for this study. Different databases like ENSEMBLE and 1000 Genome Project has been used to retrieve SNP data in form of VCF file which is further submitted to different software to sort SNPs into benign and deleterious. Selected SNPs are further annotated by using 3-D modeling techniques using I-TASSER online software. Furthermore, selected nsSNPs were checked in Gujrat and Faisalabad population through RFLP analysis. In this study population two SNPs are found to be associated with tuberculosis while one nsSNP is not found to be associated with the disease.

Keywords : association, CD209, DC-SIGN, tuberculosis

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