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## Allele and genotype distributions of polymorphisms of gemcitabine metabolic pathway genes in south indian healthy population

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Gemcitabine is a deoxycytidine analog that has demonstrated anticancer activity in several solid tumors, including lung, pancreatic Gand breast cancer. Because of the continuous genomic instability the response rates of gemcitabine have gradually decreased. Candidate gene approach that focuses on one or few genes involved in drug metabolism, transport or targeting pathways provides more validate information in explaining the relationship between Single Nucleotide Polymorphisms (SNP's) and gemcitabine based chemotherapy. However, various studies have reported ethnic differences in clinical response to gemcitabine. Thus, the present study was aimed to establish the normative frequencies of genes involved in the metabolic pathway of Gemcitabine (RRM1 -37C>A (rs12806698), RRM1 -524C>T 11030918 and CDA -79A>C 2072671) in South Indian healthy population and compared with HapMap populations. This study was carried out on 103 healthy subjects of South Indian origin and genotyping was done using RT-PCR (Real Time Polymerase Chain Reaction). The frequencies of the above polymorphisms were in Hardy-Weinberg equilibrium (p > 0.05). The minor allele frequencies of the SNPs RRM1 -37C>A (rs12806698), RRM1 -524C>T 11030918 and CDA -79A>C 2072671 were 34.5, 40.3, 24.3 respectively. There was a significant difference observed between the genotype and allele frequencies of south Indians with the HapMap populations. The present work provides normative frequency distribution of the south Indian healthy population, which can be used for the identification of candidate genes responsible for the resistance and toxicity of gemcitabine based chemotherapy in cancer patients and thus helps in tailoring the treatment based on the genetic profile of the individual.

## Biography

T. Devika is pursuing 3rd year of Ph.D from Jawaharlal Institute of Postgraduate Medical Education & Research (JIPMER), India. She is working on the genomics of Gemcitabine metabolic pathway genes in Lung Cancer patients of south Indian Origin. She is one of the active Ph.D students involved as a resource person in various workshops conducted in the Department of Pharmacology, JIPMER. She has also attended several National and International conferences, CMEs and Seminars.

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