

Study of DYS 390 Polymorphism among Khatri Population of Punjab in Comparison to Other Indian and World Population

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ABSTRACT The Y chromosome specific polymorphism (Y-STR and Y-SNPs) can be used to track paternal lineages as well as male specific movements and admixture among humans. The objective of the present work is to study the genetic polymorphism at Y chromosome specific STR locus, DYS390 among Khatri population of Punjab and generate a comparative data with respect to other Indian and world populations. The DNA was isolated from blood samples of Khatri male individuals through organic method and were amplified by PCR using specific primers for DYS390 locus. The PCR products were electrophoresed on polyacrylamide gels and silver staining was done to resolve and observe different alleles. Gel-Pro 3.1 software was used to confirm the allele size. Chi-Square test was applied to test whether differences between the allele frequencies among Khatri, other Indian and world populations were statistically significant. Network Joining (NJ) tree was constructed using Network analysis software. The results showed 7 different alleles ranging from 22 to 28 in Khatri population and revealed a significantly high degree of genetic heterogeneity at this locus. The gene diversity was found to be 0.8363. The Network Joining tree showed Khatri population as an independent branch alongside Chinese. Therefore, it can be inferred that Khatri population is probably a result of conglomeration of different lineages, like most other North-West Indian population.