



Structure and polymorphism of novel X-chromosome short tandem repeat loci in a Chinese Han population

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Genet. Mol. Res. 14 (4): 15044-15049 (2015)

Received June 11, 2015

Accepted September 30, 2015

Published November 24, 2015

DOI <http://dx.doi.org/10.4238/2015.November.24.12>

ABSTRACT. Recently, 5 novel X-chromosome short tandem repeat (X-STR) loci with high degrees of polymorphism were examined. In this study, we investigated the genetic distribution of these loci in a Chinese Han population. The 5 X-STR loci were successfully examined by polyacrylamide gel electrophoresis in a total of 200 unrelated Shaanxi Han individuals (100 males and 100 females). Hardy-Weinberg equilibrium tests revealed no significant deviation from expected values ($P > 0.05$) for all 5 X-STR loci in the Shaanxi Han population. The loci were named DXS-p11.3, DXS-q12, DXS-q13.3, DXS-q22.1, and DXS-q25 and were found to contain 6, 8, 7, 7, and 5 alleles, respectively. In addition, 17, 21, 18, 19, and 11 genotypes, respectively, were detected in the female samples. The heterozygosities of the 5 X-STR loci were 0.75, 0.74, 0.74, 0.72, and 0.56, respectively. The polymorphic information contents of the 5 X-STR loci were 0.70, 0.69, 0.69, 0.68, and 0.51, respectively. The individual

discrimination values of the 5 X-STR loci were 0.88, 0.86, 0.88, 0.87, and 0.74, respectively. Five new X-chromosome STR loci with high degrees of polymorphism were observed in our lab. The results of this study are important for forensic individual identification, paternity identification, and population genetics research.

Key words: Han population; Short tandem repeats; X-chromosome