

THE POSSIBLE ROLE OF SOCIAL SELECTION IN THE DISTRIBUTION OF MAJOR HAPLOTYPES OF Y-CHROMOSOME HAPLOGROUP C3* IN CENTRAL ASIAN POPULATIONS

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INTRODUCTION.

C3* star-cluster was detected in a large study on Y-chromosome variations in 16 populations of Eurasia, and C3* star-cluster was present at high frequencies in many populations that about 0.5% of people on earth carry this type of Y chromosome [1,2,3]. Social factors may be important contributors to reproductive success and determination of the selective survival of individuals. The role of social selection on the distribution Y-chromosomes has been studied.

MATERIALS AND METHODS.

A total of 783 haplotypes were assigned to the haplogroup C3*-M217(xM48) based on genotyping 17 Y-chromosomal STR markers. These haplotypes represent 11 populations of Eurasia: Kazakhs, Mongols, Kyrgyz, Telengits, Circassians, Balkar, Temirgoys, Karachai, Evenks, Kizhi and Pashtuns. The phylogenetic relationships between C3* star-cluster haplotypes within were estimated with the Reduced Median (RM) network algorithm using Network 4.1.1.2, and RM networks with a reduction threshold equal to 1 were visualized with Network Publisher.

RESULTS AND DISCUSSION.

It was revealed that there is a major haplotype with 12% frequency in C3*. This haplotype includes and extends the previously described 'star-cluster' haplotype [4]. There are four other haplotypes within haplogroups C3* were also identified: "Moghulistan" (DYS458-17) - with a frequency of 7%, "Telengits" (DYS19 - 15) - 4%, "Abak-kerey" (DYS448 - 23) - 3%, and "Khalkh" (DYS635 - 22) - 3%, which differ from the major cluster by one mutation.

CONCLUSION.

There is a strong connection between social selection and birth rate of the descendants, whose fathers had achieved high social status during the expansion of the Mongol Empire and associated historical events. We suppose this major ancestral haplotype to be the "proto-Mongolian haplotype", inherited by Genghis Khan and his descendants. It can be assumed that the four common haplotypes also spread as a result of positive social selection, because some clans were endowed with a number of privileges and high status during the Mongol expansion.

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