

POLYMORPHISM OF THE Y-CHROMOSOME IN KAZAKH POPULATIONS FROM THE PERSPECTIVE OF “SHEZHIRE” STRUCTURE

Zhabagin Maxat^{1,2}, Askapuli Ayken¹, Sabitov Zhaxylyk³, Dibirova Khadizhat^{4,2},
Kuznetsova Marina^{4,2}, Balanovska Elena⁴, Zhumadilov Zhaxybai¹, Balanovsky Oleg^{2,4}

¹*Center for Life Sciences, Nazarbayev University, Astana, Kazakhstan*

²*Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia*

³*Gumilyov Eurasian National University, Astana, Kazakhstan*

⁴*Research Centre for Medical Genetics, Russian Academy of Medical Sciences, Moscow, Russia*

In the perspective of the heritage of the steppe nomads – Shezhire – the genealogy of Kazakh population represents a complex system of tribal structure. Shezhire is based on the patronymic tradition memory. Names of “clan” or “tribe” are inherited like the genetic information on Y-chromosome. This enables to trace the connection between social (Shezhire) and biological (Y-chromosomal) relationships and verify the hypotheses of the origin of some tribes. These data on the fine structure of the gene pool of Kazakh population provides also information about historical migrations. We studied the genetic variations of Y-chromosome in three ethno-territorial units of 14 clans and 20 tribal groups of the Kazakhs in the perspective of hierarchically organized tribal structure. A total of 1407 samples were analyzed by 40 Y-chromosome SNP and 17 STR markers. Summary statistics of haplotype variation were calculated, genetic relationships between subpopulations were estimated, and the phylogenetic tree of microsatellites haplotypes was constructed. It was revealed that there are nine dominant haplogroups in Kazakhs: C3 (xC3c)-M217(xM48), C3c-M48, G1a-P20, J2-M172, N1c1a-M178, O3a3c1-M134, Q-M242, R1a1a*-M198(xM458), and R1b1a-P297. The genetic diversity in the Kazakh population was estimated to be 0.869 ± 0.004 . “Genetic portraits” of each tribe and clan were created. The phenomenon of dominance of an individual haplogroup in each clan was revealed. It suggests that in many Kazakh clans most of their members trace their origins to one biological founder. Thus genetic data largely agree with the genealogical structure of “Shezhire”. Note, that the generic (clan) level of organization of the Kazakh population most accurately characterizes the gene pool structure based on Y-chromosome polymorphisms that the “tribal” or “regional” levels. This study was supported by RFBR grant 14-06-31331, Presidium RAS program “Molecular and cell biology” and Targeted funding of Ministry of Education and Science of Republic Kazakhstan.

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Contact information: Zhabagin Maxat, e-mail: maxat.zhabagin@nu.edu.kz.