

GENOMIC VARIATION OF CATECHOL-O-METHYL TRANSFERASE (COMT), DOPAMINE D4 RECEPTOR (DRD4), DOPAMINE D2 RECEPTOR (DRD2) AND MONOAMINE OXIDASE A (MAOA) GENES IN HADZA AND DATOGA MALES

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The study of genetic basis of aggressive behavior is one of the leading directions of modern behavior genetics. Here we examine the variability of four candidate genes, associated with aggressive behavior – COMT, DRD4, DRD2 and MAOA, in two traditional African groups (the Hadza, egalitarian hunter-gatherers and the Datoga, pastoralists and warriors) different by the level of culturally permitted in-group and out-group aggression. The functionally important polymorphisms, VNTRs in promoter region of the MAOA gene, VNTRs in promoter region (DRD4Pr locus) and in the third exon (DRD4E3 locus) of the DRD4 gene, SNP in the COMT (rs4680) and DRD2 (rs1800497) genes, supposedly associated with violent aggressive behavior were detected. The DNA of the Hadza (n=199) and the Datoga (n=230) were tested, using locus specific PCR. It was demonstrated that these two groups differed significantly by the frequency of distribution of genotypes COMT M/M and COMT V/V: in Hadza (COMT M/M – 0.231 and COMT V/V – 0.287) and in Datoga (COMT M/M – 0.107 and COMT V/V – 0.433). The difference in allele frequency of DRD4E3 VNTR with 7 repeats (in Hadza – 0.093 and in Datoga – 0.213) and in distribution of homozygous genotypes 7/7 (in Hadza – 0.010 and in Datoga – 0.061) was found. Other loci studied haven't showed any significant differences between these two populations. We suggest that the differences in distribution of COMT and DRD4E3 genotypes in Hadza and Datoga are due to the different adaptations for in-group and out-group social competition. This study was supported by the RAS Program "Molecular and Cell Biology", RFBR (project # 13-04-00858), RFHR (project no. 12-01-00032), and the President RF Program (# 2501.2014.4).

Key words: *COMT, DRD4, MAOA, DRD2, allelic polymorphism, African populations Hadza and Datoga, aggressive behaviour*

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