NAME OF PRESENTING AUTHOR: Takhirova Z. R.

EMAIL ADDRESS OF PRESENTING AUTHOR: tahirovazalina@mail.ru

The analysis of the polymorphic variant *rs2285351* in the gene of *IFT122* in the development of spatial abilities of students

*[1]Takhirova Z.R., [1,2]Ismatullina V.I., [1]Adamovich T.V., [1,3] Kazantseva A.V., [1,3]Enikeeva R.F., [1,2]Lobaskova M.M., [3,4]Khusnutdinova E.K.,[2,4]Malykh S.B.

[1]Russian Academy of Education, Moscow, Russian Federation

[2] Psychological Institute, Russian Academy of Education, Moscow, Russian Federation

[3]Institute of Biochemistry and Genetics of Ufa Federal Research Centre of the Russian Academy of Sciences, Ufa, Russian Federation

[4] Moscow State University, Moscow, Russian Federation

Key words: spatial ability, cognition, gene, polymorphic variant, intellect

Spatial abilities play a significant role in a person's success, they are a reliable predictor of his academic achievements in scientific fields related to STEM. The conducting of massive longitudinal screenings are show ~69% of all individual differences are due to the participation of various genetic factors (Rimfeld et al., 2017). We searched for the association of the polymorphic variant *rs2285351* in the gene *IFT122* with the development of the spatial abilities of 312 young people different sex, aged 17-34, studying in higher educational institutions with using KASP technology (LGC, Biosearch Technologies). The analysis of the association was carried out in such indicators as: sex, professional sphere and psychological correlates (4 tests for space: mechanical reasoning; paper folding; pattern assembly; share rotation, academic performance, test of Raven). The statistical evaluation revealed deviations in 16 respondents on data of testing in the distance of Mahalanobis (>95%) and therefore they were removed from the study. So that the group consist of 296 people (60 men, 236 women). For evaluate the results of genotyping, we using the software PLINK 1.9. During the analysis, we found statistically significant differences in comparing individuals of the technical and socio-humanitarian spheres (β=1.441, p=0.0387), which indicates the involvement of *rs2285351* of the gene *IFT122* in the development of spatial intelligence in our group. It is also known that *rs2285351* is associated with the development of the spatial orientation trait (Bi et al., 2017).

Grant Support: The present study was supported by the Russian Science Foundation (Project No. 17-78-30028).