

ETHNOGENETIC ESTIMATION OF BALTIC ANCESTRY

Agrita Puzuka¹, Liana Pliss², Linda Piekuse¹, Svetlana Limborska³, Astrida Krumina²
e-mail: agrita.puzuka@gmail.com

¹ Riga Stradiņš University, Laboratory of Molecular Genetics, Latvia

² Latvian Biomedical Research and Study Centre, Riga, Latvia

³ Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia

BACKGROUND

Y chromosome is widely used as a marker in the population genetic studies. The aim of this study was to estimate the possible genetic origin of Balts by performing Y chromosome haplogroup (Y-Hg) analysis of Russian individuals who inhabit the historical regions of the Baltic tribes and to compare Y-Hg frequencies with incidence of Y-Hg in Latvian population.

METHODS

A study encompassed 192 men, representing four Northwestern and Central Russian regions and 153 unrelated ethnic Latvians. The DNA samples were hierarchically genotyped (using appropriate PCR followed by RFLP or sequencing of corresponding PCR products) by 10 Y chromosomal binary markers (M9, SRY-1532, Tat, P21, M170, P37, M253, M172, YAP, M35) to establish their haplogroup.

RESULTS AND DISCUSSION

Similar incidence of main Y-Hg's – N1c, R1a, and I was found in the analysed Russian regions and Latvian population. Significant differences in Y-Hg distribution in comparison with other regions under the study were observed only in Mezen (Archangelsk district, Russia). In Mezen the Slavic component representing R1a haplogroup had the lowest frequency (23%) in comparison with other Russian (~55%) and Latvian (~40%) subpopulations. On the other hand, the Finno-Ugric speaking population representing haplogroup N1c was the most common in Mezen (51%) in comparison with other Russian (~15%) and Latvian (~45%) subpopulations.

CONCLUSIONS

No significant differences in common Y-Hg distribution among the analysed Russian and Latvian populations were found. The analysis of Y-Hg genofund in Mezen indicates possible Finno-Ugric ancestry that could be confirmed after Y haplotype (Y-STR) analysis.

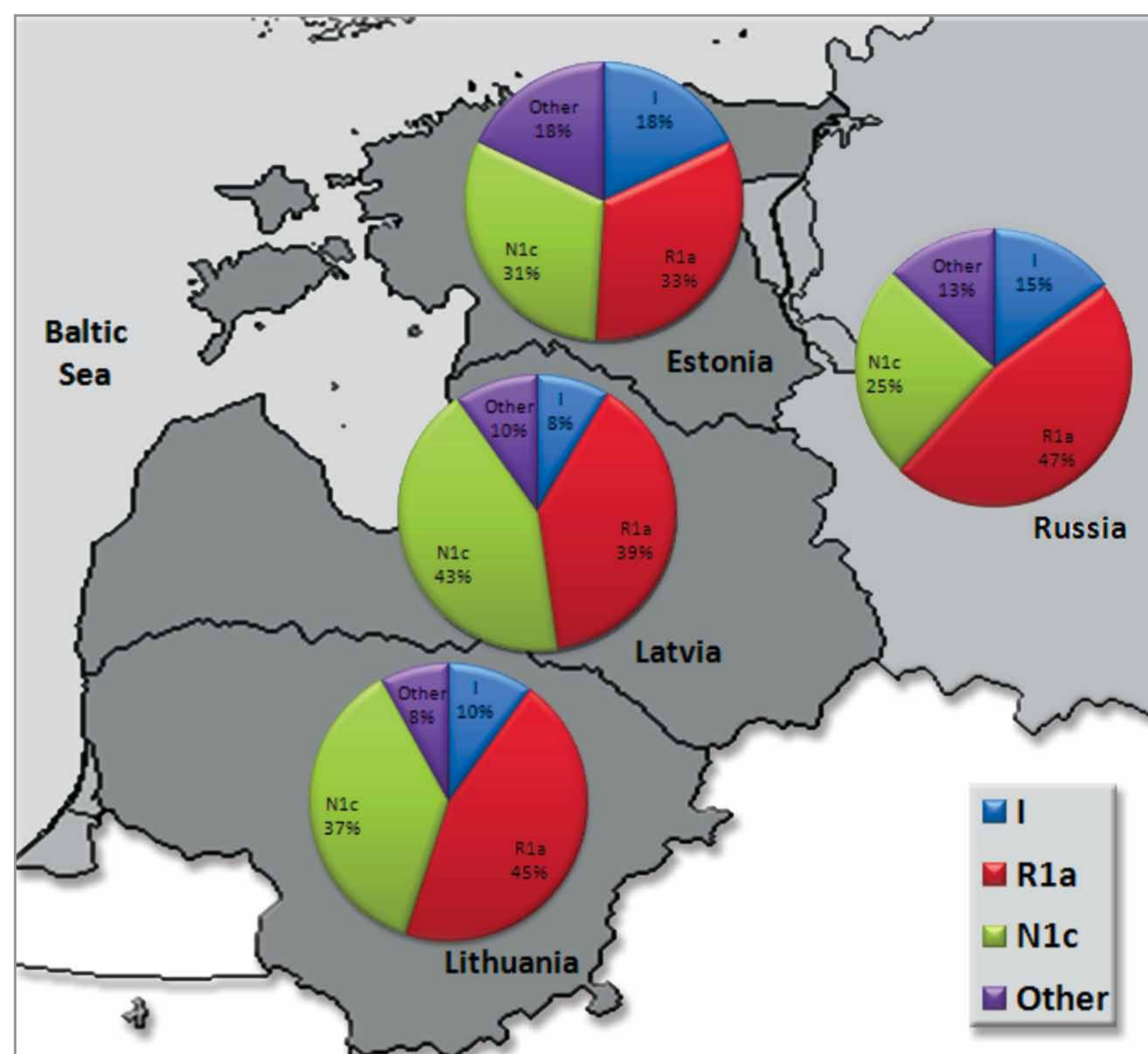


Fig.1. Distribution of common Y chromosome haplogroups in the Baltic countries and in Northwestern and Central Russia. (Latvians – the present study; Lithuanians – Kasperaviciute et al. 2004; Estonians – Lappalainen et al. 2008; Russians – Balanovsky et al. 2008.)

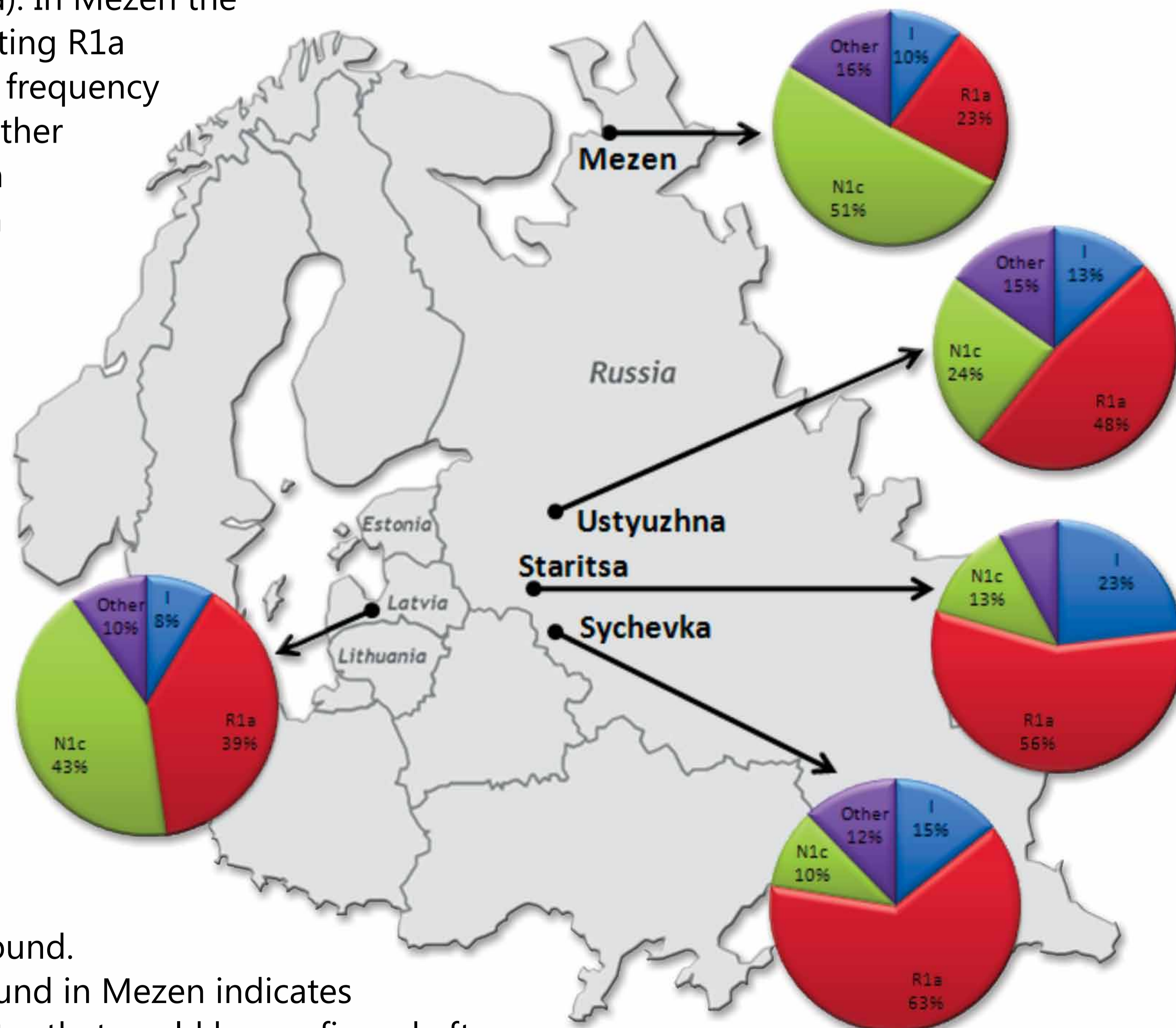


Fig.2. Incidence of common Y chromosome haplogroups in Latvian population and in Russian individuals inhabiting four historical regions of the Baltic tribes.