

Y CHROMOSOME HAPLOGROUP ANALYSIS TO ESTIMATE GENETIC ORIGIN OF BALTS

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BACKGROUND

To obtain a more accurate portrait of ancestry of Balts Y chromosome haplogroups (Y-hg) structure was determined in Russian individuals that inhabit historical regions of Baltic tribes and compared with incidence of Y-hg in Latvian population.

MATERIAL AND METHODS

A study comprised 192 men – representatives of four Northern-Western Russian regions (Mezen, Ustyuzhna, Sychevka, Starista) and 153 men representing Latvian subpopulations. To establish Y haplogroups DNA samples were hierarchically genotyped (using appropriate PCR followed by RFLP or sequencing) by 13 Y chromosomal binary markers (M9, SRY-1532, M17, Tat, M178, M170, P37, M253, M223, M172, YAP, M35, M201).

RESULTS AND DISCUSSION

It was found that distribution of major Y-hg's was relatively homogenous among analysed Russian and Latvian subpopulations. Only Russian subpopulation Mezen (Archangelsk district) showed the lowest frequency of the Slavic component representing R1a haplogroup (22.5%) in comparison to other Russian (~55%) and Latvian (~40%) subpopulations. On the other hand the Fino-Ugric speaking population representing haplogroup N1c was the most common in Mezen (51%) in comparison to other Russian (~15%) and Latvian (~45%) subpopulations. Principal component analysis revealed that haplogroup N1c links Mezen with Eastern Latvian subpopulations Semigalians and Letigalians in one cluster, representing the hypothesis that the genetic history of N1c Y chromosomes in Baltic-speaking populations is distinct from that of the Uralic speakers.

CONCLUSIONS

Findings indicate that there are no significant differences in common Y-hg distribution among analysed Russian and Latvian subpopulations; however the analysis of Y-Hg genofund in Mezen indicates possible Fino-Ugric or Baltic ancestry.

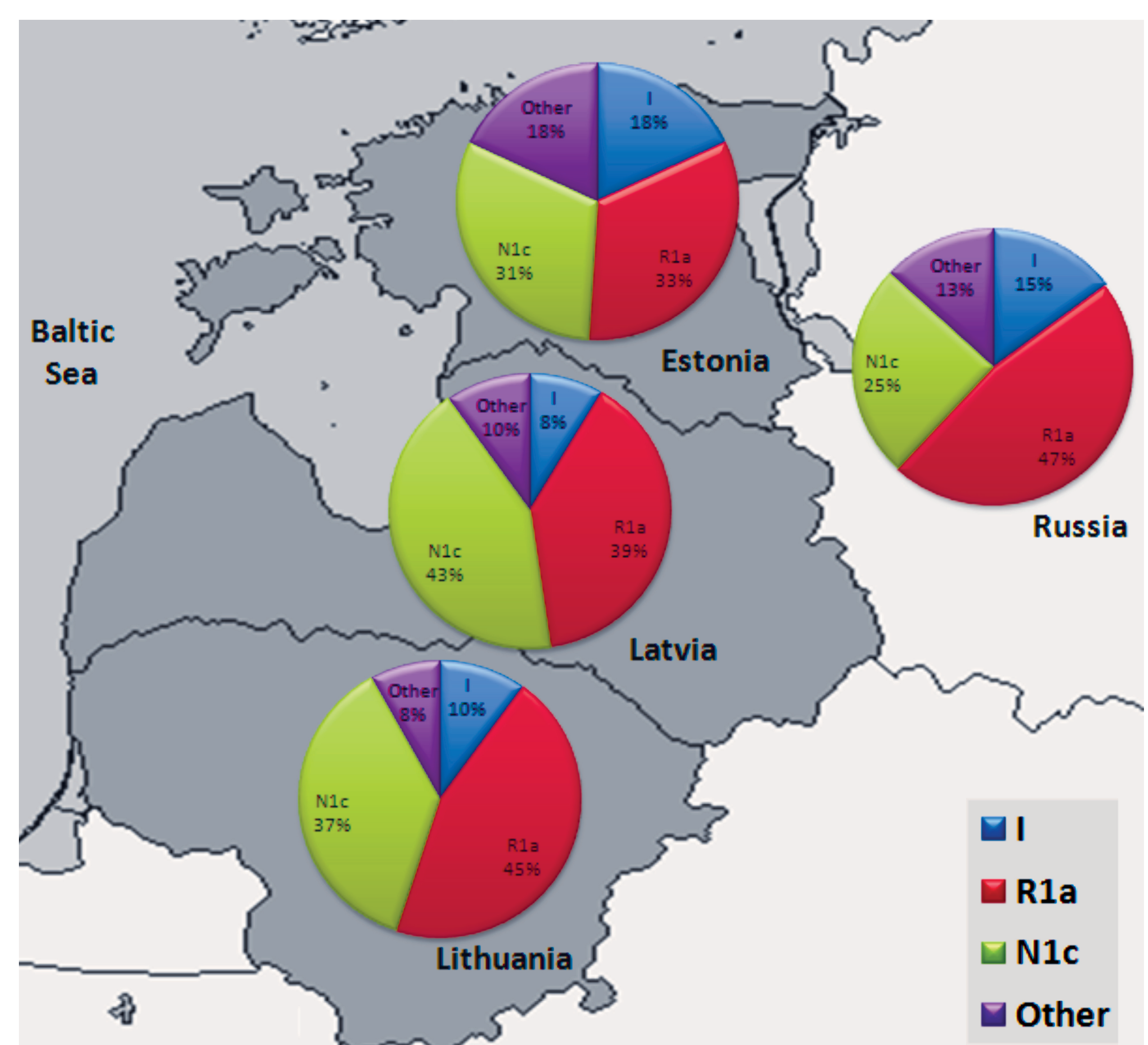


Figure 1. Distribution of common Y chromosome haplogroups in the Baltic countries and in Northern-Western Russia.

(Latvians: present study; Lithuanians: Kasperaviciute et al. 2004; Estonians: Lappalainen et al. 2008; Russians: Balanovsky et al. 2008.)

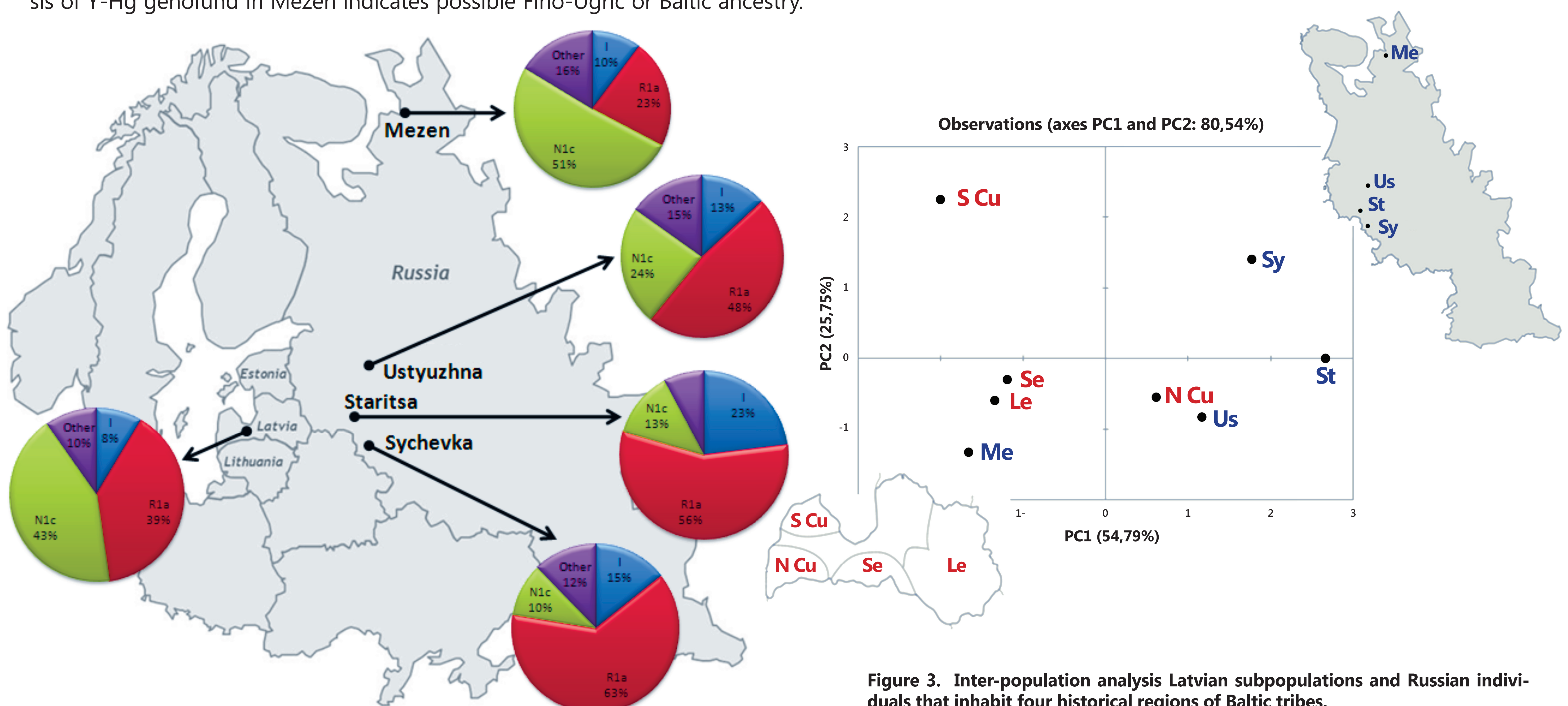


Figure 2. Incidence of common Y chromosome haplogroups in Latvian population and in Russian individuals that inhabit four historical regions of Baltic tribes.

Figure 3. Inter-population analysis Latvian subpopulations and Russian individuals that inhabit four historical regions of Baltic tribes.

Latvian subpopulations: S Cu – Southern Curonians, N Cu – Northern Curonians, Se – Semigalians, Le – Letigalians. Northern-Western Russian subpopulations: Me – Mezen, Us – Ustyuzhna, Sy – Sychevka, St – Starista