**Studiul distribuției pe tari a haplogrupurilor după cromozomul Y (Y-DNA)**

Taskuri

1. Analiză în componente principale

2. Analiză factorială

3. Analiză de clusteri

Cromozomul Y uman ADN permite împărțirea populației în grupuri genealogice. Aceste grupări sunt numite haplogrupuri. In tabelul de mai jos sunt prezentate procente aferente pentru 12 markeri genetici întâlniți la populații din Europa. Datele sunt prezentate pe țări, iar în cazul unor țări pe regiuni.

***Observație***.

Datele sunt culese după mai multe surse (<http://www.eupedia.com/europe/european_y-dna_haplogroups.shtml>) pe eșantioane de dimensiuni variabile.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Region | I1 | I2a | I2b | R1a | R1b | G | J2 | J1 | E1b1b | T | Q | N |
| Albania | 2 | 12 | 1.5 | 9 | 16 | 1.5 | 19.5 | 2 | 27.5 | 1 | 0 | 0 |
| Austria | 12 | 7 | 2.5 | 19 | 32 | 7.5 | 9 | 1 | 8 | 1 | 0.5 | 0.5 |
| Tyrol | 16 | 1 | 2.5 | 14 | 42 | 7.5 | 9 | - | 5.5 | 1 | 0.5 | 0 |
| Belarus | 5.5 | 17.5 | 1 | 51 | 5.5 | 1.5 | 2.5 | 1 | 4 | 0 | 0 | 10 |
| Belgium | 12 | 3 | 4.5 | 4 | 61 | 4 | 4 | 1 | 5 | 1 | 0.5 | 0 |
| Bosnia-Herzegovina | 3 | 55.5 | 0 | 15 | 3.5 | 1.5 | 4 | 0.5 | 12 | 1 | 2 | 2 |
| Bosniaks | 4 | 56 | 0 | 16 | 3 | 2 | 3.5 | 0.5 | 10 | 0.5 | 0.5 | 0.5 |
| Bosnian Croats | 0 | 71 | 2 | 12 | 2 | 1 | 1 | 0 | 9 | 0 | 0 | 0 |
| Bosnian Serbs | 2.5 | 31 | 2.5 | 13.5 | 6 | 1 | 8.5 | 0 | 22.5 | 2 | 2 | 2.5 |
| Bulgaria | 4 | 20 | 2 | 17 | 11 | 5 | 11 | 3 | 23.5 | 1.5 | 0.5 | 0.5 |
| Croatia | 5.5 | 37 | 1 | 24 | 8.5 | 2.5 | 6 | 1 | 10 | 0.5 | 1 | 0.5 |
| Czech Republic | 11 | 9 | 4 | 34 | 22 | 5 | 6 | 0 | 6 | 1 | 1.5 | 0.5 |
| Cyprus | 0 | 8 | 0 | 3 | 9 | 9 | 37 | 6 | 20 | 5 | 0 | 0 |
| Denmark | 34 | 2 | 5.5 | 15 | 33 | 2.5 | 3 | 0 | 2.5 | 0 | 1 | 1 |
| Greenland | 14.5 | 0 | 2 | 9 | 21.5 | 0 | 2 | 0 | 0.5 | 0 | 49.5 | 0 |
| England | 14 | 2.5 | 4.5 | 4.5 | 67 | 1.5 | 3.5 | 0 | 2 | 0.5 | 0.5 | 0 |
| Estonia | 15 | 3 | 0.5 | 32 | 8 | 0 | 1 | 0 | 2.5 | 3.5 | 0.5 | 34 |
| Finland | 28 | 0 | 0.5 | 5 | 3.5 | 0 | 0 | 0 | 0.5 | 0 | 0 | 61.5 |
| France | 8.5 | 3 | 3.5 | 3 | 58.5 | 5.5 | 6 | 1.5 | 7.5 | 1 | 0.5 | 0 |
| Alsace | 8 | 1 | 3 | 3 | 55 | 6 | 8 | 1 | 10 | 4 | 1 | 0 |
| Auvergne | 2 | 1 | 1.5 | 5.5 | 52.5 | 9 | 8 | 3.5 | 12.5 | 4.5 | 0 | 0 |
| Brittany | 8 | 1 | 4.5 | 0.5 | 80 | 2 | 2.5 | 0.5 | 0.5 | 0 | 0 | 0 |
| Corsica | 0 | 18.5 | 1 | 0 | 49 | 7.5 | 14 | 0 | 8 | 0.5 | 0 | 0 |
| Flanders-Artois | 13 | 2.5 | 1 | 2.5 | 61 | 6 | 2.5 | 0 | 12 | 0 | 0 | 0 |
| Ile-de-France | 2.5 | 2 | 2 | 3.5 | 57.5 | 3.5 | 6.5 | 1 | 20.5 | 0 | 0 | 0.5 |
| Midi-Pyrénées | 2.5 | 5 | 2.5 | 4 | 61 | 4 | 8.5 | 4 | 7.5 | 1 | 0 | 0 |
| Normandy | 7 | 4 | 2 | 1 | 76 | 0 | 2 | 1 | 5 | 0 | 1 | 0 |
| Poitou-Saintonge | 1.5 | 3 | 0 | 0 | 74.5 | 7.5 | 6 | 0 | 1.5 | 0 | 0 | 0 |
| Provence | 2 | 4 | 1 | 5 | 58 | 7.5 | 8.5 | 1 | 10.5 | 1 | 2 | 0 |
| Rhône-Alpes | 7 | 1.5 | 2.5 | 5 | 66.5 | 5 | 2.5 | 0 | 5 | 0 | 5 | 0 |
| Germany | 16 | 1.5 | 4.5 | 16 | 44.5 | 5 | 4.5 | 0 | 5.5 | 1 | 0.5 | 1 |
| North Germany | 18.5 | 0.5 | 7.5 | 22 | 36 | 3.5 | 4 | 0.5 | 2.5 | 1 | 2 | 1.5 |
| East Germany | 16.5 | 1.5 | 5 | 24 | 36 | 4 | 2 | 0 | 7.5 | 1 | 1 | 1 |
| West Germany | 12.5 | 2.5 | 6.5 | 9 | 47 | 5 | 5 | 0 | 8 | 1.5 | 0.5 | 2 |
| South Germany | 10.5 | 4.5 | 3 | 9.5 | 48.5 | 8 | 5.5 | 1 | 8 | 1.5 | 0.5 | 0.5 |
| Greece | 3.5 | 9.5 | 1.5 | 11.5 | 15.5 | 6.5 | 23 | 3 | 21 | 4.5 | 0 | 0 |
| North Greece | 5.5 | 16 | 1 | 18 | 13 | 4.5 | 15 | 2.5 | 20.5 | 4 | 0 | 0 |
| Central Greece | 3.5 | 7 | 3.5 | 11 | 11.5 | 6 | 19 | 3.5 | 29.5 | 5 | 0 | 0 |
| South Greece | 1.5 | 9 | 1 | 10.5 | 20.5 | 3.5 | 19.5 | 1 | 27 | 4.5 | 0 | 0 |
| Crete | 4 | 7 | 1 | 9 | 15 | 9.5 | 34 | 5 | 11 | 4 | 0.5 | 0 |
| Aegean Islands | 3 | 3 | 2.5 | 10 | 19 | 8.5 | 20 | 3 | 22 | 6 | 0 | 0 |
| Hungary | 8.5 | 16 | 2 | 29.5 | 18.5 | 3.5 | 6.5 | 3 | 8 | 0 | 0 | 0.5 |
| Iceland | 29 | 0 | 4 | 23 | 42 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Ireland | 6 | 1 | 5 | 2.5 | 81 | 1 | 1 | 0 | 2 | 0 | 0 | 0 |
| Italy | 4.5 | 3 | 2.5 | 4 | 39 | 9 | 15.5 | 3 | 13.5 | 2.5 | 0 | 0 |
| North Italy | 7 | 1 | 3.5 | 4.5 | 49.5 | 7.5 | 10 | 1.5 | 11 | 2 | 0 | 0 |
| Tuscany | 4 | 1.5 | 2.5 | 4 | 52.5 | 9 | 11.5 | 2 | 9 | 2 | 0 | 0 |
| Central Italy | 2.5 | 2 | 1.5 | 3 | 36 | 11 | 23 | 5 | 11.5 | 3 | 0 | 0 |
| South Italy | 2.5 | 3.5 | 1 | 3 | 27.5 | 10.5 | 21.5 | 4 | 18.5 | 2.5 | 0 | 0 |
| Sicily | 3.5 | 3 | 1 | 4.5 | 26 | 8.5 | 23 | 3.5 | 20.5 | 4 | 1 | 0 |
| Sardinia | 0 | 37.5 | 2 | 1 | 18.5 | 12 | 9 | 4 | 9.5 | 1.5 | 0 | 0 |
| Kosovo | 5.5 | 2.5 | 0 | 4.5 | 21 | 0 | 16.5 | 0 | 47.5 | 0 | 0 | 0 |
| Latvia | 6 | 1 | 1 | 40 | 12 | 0 | 0.5 | 0 | 0.5 | 0.5 | 0.5 | 38 |
| Lithuania | 6 | 6 | 1 | 38 | 5 | 0 | 0 | 0 | 1 | 0.5 | 0.5 | 42 |
| Macedonia | 3 | 23 | 1.5 | 13.5 | 12.5 | 4 | 14 | 2 | 21.5 | 1.5 | 0.5 | 0.5 |
| Malta | 1 | 10 | 1 | 3.5 | 32.5 | 6.5 | 21 | 8 | 9 | 4.5 | 1 | 0 |
| Moldova | 5 | 21 | 3 | 30.5 | 16 | 1 | 4 | 4 | 13 | 1 | 0 | 1.5 |
| Gagauzes | 4 | 20 | 3 | 19 | 12.5 | 13.5 | 5.5 | 2 | 11 | 3 | 0 | 1 |
| Montenegro | 6 | 29.5 | 1.5 | 7.5 | 9.5 | 2.5 | 9 | 0.5 | 27 | 0 | 2 | 1.5 |
| Netherlands | 16.5 | 1 | 6.5 | 4 | 49 | 4.5 | 3.5 | 0.5 | 3.5 | 1 | 0 | 0 |
| Norway | 31.5 | 0 | 4.5 | 25.5 | 32 | 1 | 0.5 | 0 | 1 | 0 | 1 | 2.5 |
| Poland | 8.5 | 5.5 | 2 | 57.5 | 12.5 | 1.5 | 2.5 | 0 | 3.5 | 0.5 | 0.5 | 4 |
| Portugal | 2 | 1.5 | 3 | 1.5 | 56 | 6.5 | 9.5 | 3 | 14 | 2.5 | 0.5 | 0 |
| Romania | 4.5 | 26 | 2.5 | 17.5 | 12 | 5 | 13.5 | 1.5 | 15 | 0.5 | 0.5 | 0.5 |
| Russia | 5 | 10.5 | 0 | 46 | 6 | 1 | 3 | 0 | 2.5 | 1.5 | 1.5 | 23 |
| Bashkirs | 0 | 0.5 | 0 | 26 | 47.5 | 0.5 | 3 | 0 | 0.5 | 0 | 0 | 17 |
| Chuvashs | 7 | 4.5 | 0 | 30 | 3 | 0 | 13 | 1.5 | 13 | 0 | 0 | 28 |
| Komis | 2 | 2 | 0 | 29 | 11 | 0 | 0 | 0 | 5 | 0 | 0 | 51 |
| Maris | 3 | 1 | 0 | 32 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 61 |
| Mordvins | 8 | 1 | 3 | 36 | 11 | 3 | 14 | 0 | 9 | 0 | 0 | 15 |
| Tatars | 8 | 2 | 1 | 24.5 | 8.5 | 9 | 10.5 | 0.5 | 10 | 5 | 2 | 16 |
| Udmurts | 2 | 0.5 | 0.5 | 15 | 13 | 0.5 | 0 | 0 | 0.5 | 0.5 | 0 | 67 |
| Scotland | 9 | 1 | 4 | 8.5 | 72.5 | 0.5 | 2 | 0 | 1.5 | 0.5 | 0.5 | 0 |
| Serbia | 8.5 | 33 | 0.5 | 16 | 8 | 2 | 8 | 0.5 | 18 | 1 | 1.5 | 2 |
| Slovakia | 6.5 | 16 | 1.5 | 41.5 | 14.5 | 4 | 2 | 1 | 6.5 | 0.5 | 0.5 | 3 |
| Slovenia | 9 | 20.5 | 1.5 | 38 | 18 | 1.5 | 2.5 | 0 | 5 | 1 | 0 | 0 |
| Spain | 1.5 | 4.5 | 1 | 2 | 69 | 3 | 8 | 1.5 | 7 | 2.5 | 0 | 0 |
| Andalusia | 0 | 9.5 | 0 | 3.5 | 58.5 | 3 | 10.5 | 2 | 10 | 3 | 0 | 0 |
| Aragon | 2 | 14.5 | 1 | 2 | 60.5 | 1 | 10.5 | 0 | 5 | 4 | 0 | 0 |
| Asturias | 2 | 2 | 0 | 2.5 | 58.5 | 8 | 8 | 2 | 14 | 3 | 0 | 0 |
| Basque country | 0.5 | 5 | 0 | 0 | 85 | 1.5 | 2.5 | 0.5 | 2.5 | 0 | 0.5 | 0 |
| Cantabria | 1 | 3 | 2 | 8.5 | 55 | 10.5 | 3 | 2.5 | 11 | 2.5 | 0 | 0 |
| Castile & Leon | 0.5 | 2 | 0.5 | 3 | 64 | 5 | 6 | 1 | 16 | 2 | 0 | 0 |
| Castile-La-Mancha | 1.5 | 1.5 | 0.5 | 1.5 | 66 | 8 | 10 | 4 | 5 | 2 | 0 | 0 |
| Catalonia | 2 | 3.5 | 1.5 | 1.5 | 66.5 | 4.5 | 7.5 | 1.5 | 8.5 | 1 | 0 | 0 |
| Extremadura | 3.5 | 5 | 1 | 0 | 50 | 5 | 11.5 | 0 | 18.5 | 5 | 0 | 0 |
| Galicia | 3 | 2.5 | 1.5 | 0 | 63 | 3 | 3.5 | 1 | 22 | 0.5 | 0 | 0 |
| Valencia | 3 | 5.5 | 1 | 3 | 63.5 | 1 | 6 | 2 | 13.5 | 1.5 | 0 | 0 |
| Sweden | 37 | 1.5 | 3.5 | 16 | 21.5 | 1 | 2.5 | 0 | 3 | 0 | 2.5 | 7 |
| Gotland | 50 | 0 | 5.5 | 14.5 | 17.5 | 0 | 0 | 0 | 1 | 2 | 4 | 7.5 |
| Switzerland | 14 | 1.5 | 8 | 3.5 | 50 | 7.5 | 3 | 0.5 | 7.5 | 0.5 | 1.5 | 1 |
| Turkey-Anatolia | 1 | 4 | 0.5 | 7.5 | 16 | 11 | 24 | 9 | 11 | 2.5 | 2 | 4 |
| Ukraine | 3.5 | 13 | 0.5 | 45 | 7.5 | 2.5 | 7 | 1 | 5.5 | 1 | 1 | 7.5 |
| Wales | 12 | 1 | 3 | 1 | 74 | 2.5 | 0.5 | 0 | 4 | 1 | 0 | 0 |