

Allele Frequency Distribution in Schleswig-Holstein  
for the DNA Probes MS1, MS31, MS43A, G3 and YNH24

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Introduction:

In cases of disputed paternity and in forensic science case work it is necessary to know whether the frequency distribution of the DNA alleles differs from other reported populations. Therefore we investigated blood samples of unrelated persons from Schleswig-Holstein. By using single locus minisatellite probes (SLP) the probability of paternity can be calculated according to ESSEN-MÖLLER. The German federal regulations say that the own frequencies should be used.

Material and Methods:

We investigated paternity cases and evaluated 355 unrelated persons.

DNA was prepared by proteolytic digestion of pelleted white blood cell nuclei, extracted by saline solution and ethanol precipitation.

5 µg DNA was digested with Hinf I (5 U/µg) and separated by electrophoresis in 0,7 % agarose gel (Pharmacia NA) (20 x 20 cm) at 30 V/33 mA for 24 hours.

The transfer was carried out by capillary blotting to a positive charged nylon membrane (Boehringer).

The membrane was hybridized with 0,6 µl/ml alkaline phosphatase labeled MS43A probe (ICI). DNA fragments were detected with a chemiluminescent system CSPD (Tropix), weight marker NICE Ladder (Gibco BRL). Measurement was carried out by digitizer according to MUCHE.

The blot was stripped and hybridized with:  
YNH24 (Promega 4 µl/ml), MS1 (ICI), MS31 (ICI) and G3 (ICI).

Results:

The frequency distributions of SLP fragments are similar to other published frequencies (HENKE et al, PFLUG et al, BUFFERY et al).

The reproducibility of measurement was confirmed by examining control DNA (K 562) on every gel. The calculation of fragment sizes is carried out using the next two marker lanes for which a result can be obtained.

References:

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