



DNA-RESEARCH FOR GENEALOGY, ARCHEOLOGY AND LOCAL HISTORY

DNA-research is the most spectacular newcomer in the genealogical field: it allows us to detect kinship and to establish the whole migration history of homo sapiens.

All of our 46 chromosomes are composed by two DNA-strings containing about 1 milliard of building blocks, the **nucleotides**. The DNA research is based on the analysis of the male Y-chromosome which is inherited exclusively from father to son. Scientists read the sequence of the nucleotides and thus determine for each individual the typical sequence or **haplotype**.

Our cells contain two kinds of DNA: the nuclear- or **Y-DNA** and the mitochondrial or **mtDNA** which is inherited via the female line. The DNA-strings are copying themselves to form new cells. During this process errors occur, **mutations**, which are transmitted via the next copy session to the following generation. There are two kinds of mutations. The rare **point mutation (SNP)** or snip, occurs by both men and women only once in circa 1 million generations on a given place on the chromosome. It is very appropriate to study human migration or **genography**. This opens perspectives for the study of regional and local history. The **repetitive mutation (STR)** occurs at average once per 182 generations, but only by men. By comparison of the STR-values it is possible to determine mutual relationship. It is potentially possible to compare them also with ancient DNA found in archeological excavations.

Comparing the haplotypes of several men one can subdivide them worldwide into some 20 large **haplogroups**. Thanks to the snips these haplogroups can be subdivided into subhaplogroups. Put simply: men belonging to a same haplo- and subhaplogroup, are descendants of a common ancestor. This is the basis of **genealogical genetics**.

To combine DNA-research with classical genealogical research is the aim of the **DNA-projects** set up by Familiekunde Vlaanderen (actually over 1.100 participants). After having determined their haplo- and subhaplogroup the participants were mutually compared. The conclusion was that **42,63 %** of them were genetically related. This means that they had a common ancestor between now and about 1.000 years ago. A unique result. The project therefore aroused notable international interest. In the meantime the results have been published in two books: *DNA Brabant* and *DNA België* (info at www.dna-benelux.eu).

This type of DNA-research has nothing to do with medical or judicial purposes. A DNA-sample is taken by scraping a bit of buccal mucosa with two small brushes inside the mouth. This sample is analysed at the university of Leuven (Louvain) and after about 2 months the participant receives a certificate with his personal results. By comparing these results with those of other participants we determine their degree of mutual relationship.

Familiekunde Vlaanderen has recently launched a BENELUX PROJECT accessible for everyone with ancestors in the present Benelux countries and the adjacent areas of France, Germany and the UK. Every male, without any distinction of nationality or origin, can join the project. Those interested, can download the text with the conditions of participation, our privacy policy and a registration form from the website www.dna-benelux.eu . If this fails to download, one can apply directly to the project leader by mailing marc.vandencloot@telenet.be in order to acquire the texts and the registration form.

