

Analysis and Interpretation of Microvariants Present in Several Tetranucleotide Canine STRs

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Medigenomix is specialized on DNA analytical services for DNA sequencing and genotyping. Our genotyping service includes identity testing in humans and animals, population genetics, gene-mapping, pharmacogenetics and forensic DNA analysis.

In our routine work for several dog breeding organisations we use different sets of markers which include 30 different STRs. For these marker sets, allelic ladders were not commercially available. Therefore we analyse a DNA mixture made from several blood samples in parallel as a control for every batch of analysed samples. By comparing the alleles from the samples with the alleles present at the controls, we found not only fragments with the expected 3- or 4-bp differences in size, depending on the motif of the STR, but also microvariants in between. In all previously published data about these markers, microvariants were not described so far. By PCR with mixed DNA from samples with alleles whose fragment size differs only at one base pair we could show that the different fragment size was true and not an effect of capillary electrophoresis (CE).

Over the past 6 years we found microvariants at several tetranucleotide canine STRs. We present data from CE of PCR products, sequencing data from several markers and tables with the alleles found so far at some highly polymorphic markers. With these data we could clearly show, that at these canine STRs microvariants are present.