

VALIDATION OF THE FASTGENE™ DIRECT PCR KIT FOR ANALYSES OF FORENSIC SAMPLES

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The DNA- Laboratory Eurofins Medigenomix is accredited according to ISO 17025 in the field of Forensic Genetics (Parentage Tests, DNA-traces, and Comparison samples) and Food analyses. Before kits are used in routine analysis they have to be validated internally in our laboratory.

The application of “Direct PCR kits” can enhance the success rate in challenging samples because no DNA is lost during extraction process and results can be retrieved after sequencing analysis in less than eight hours and after fragment length analysis in less than six hours without need of any special laboratory equipment.

We have validated the FastGene™ Direct PCR kit (NIPPON GENETICS EUROPE GmbH or Nippon Genetics Co. Ltd.). The kit contains DNARELEASE Advance lysis buffer and a HotStart PCR Ready mix. We have tested different animal and human sample material as well as plant and fungal samples.

The performance of the kit was compared to PCR results after DNA extraction with kits used in routine in the following areas:

1. Sensitivity (amounts of biological material needed)
2. Capability to extract DNA from different types of tissue (e.g. dried tissue, seeds)
3. Capability to overcome inhibition of PCR by substances present in animal or plant tissue (e.g. Hemoglobin)
4. Capability to generate PCR profiles / sequences from degraded samples
5. Capability to identify different species / individuals in mixed samples
6. Analysis of actual casework / routine samples