Rapid and efficient DNA extraction

KAPA Express Extract

CUSTOMBIOTECH

Rapid and efficient DNA extraction

KAPA Express Extract

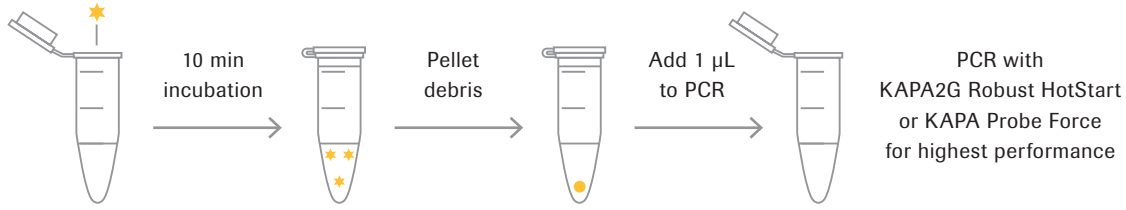
KAPA Express Extract is a novel thermostable protease and buffer system that allows for the extraction of PCR-ready DNA in as little as 15 minutes. DNA extractions are conveniently performed in a single-tube, greatly reducing the risk of sample loss and contamination.

The combination of KAPA Express Extract and KAPA2G Robust or KAPA Probe Force provides a high performance solution for rapid DNA extraction and consistent downstream amplification.

Gains from KAPA Express Extract:

- Save valuable time with PCR-ready DNA in 15 minutes
- Stay flexible with a versatile, optimized kit for a variety of sample types
- Minimize risk of contamination by using single-tube reactions

From sample to PCR in less than 15 minutes



Add sample directly
to lysis buffer

Successful DNA extraction from a variety of sample types

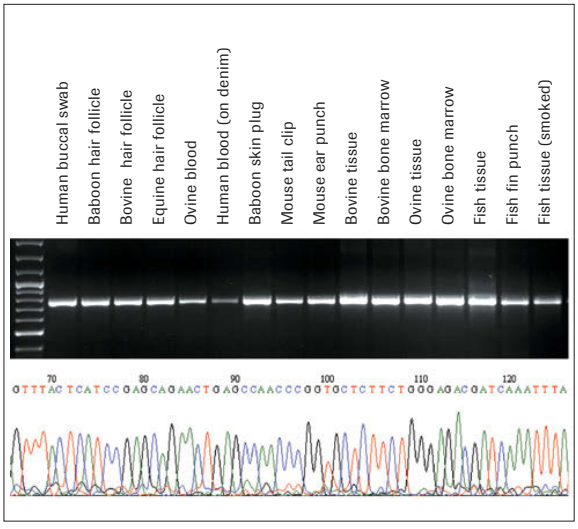


Figure 1: Successful extraction from various samples obtained from mammals and fish. DNA was extracted with KAPA Express Extract from various samples obtained from mammals and fish. From each extract, 2 µL was used directly (without quantification) in a PCR containing KAPA2G Robust HotStart ReadyMix and primers for the ~650 bp cytochrome c oxidase I gene fragment commonly used in species identification (Ivanova et al., 2007). PCR products (10 µL) were analyzed in a 1% agarose gel. Reaction products were used directly in standard Sanger sequencing reactions using out-nested M13 primers (2 µL PCR product per 10 µL sequencing reaction). Sequence data was of a high quality and enabled the identification of each species. A section of the sequence trace from Seriola lalandi (Yellowtail amberjack) tissue is presented in the bottom panel.

Reference: data on file at Roche.

For further processing only.

Rapid DNA extraction and consistent downstream amplification of FFPE samples or tissues

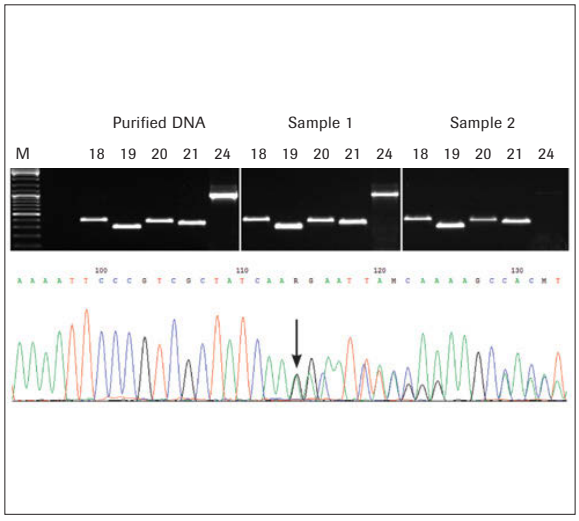


Figure 2: Fast DNA extraction and increased PCR success rates from FFPE tissue. DNA extracts were prepared from two different FFPE samples using KAPA Express Extract. Each extract was used directly (without quantification) in multiple PCRs containing KAPA2G Robust HotStart ReadyMix and primers for five different fragments (293 bp - 1 kb) of the EGFR gene (corresponding to exons 18 – 21 and 24). Results were compared to those obtained using the same reaction and cycling conditions but using 1 ng purified human genomic DNA as template. With the exception of the 1 kb exon 24 fragment from the older sample, yields and reaction efficiencies were comparable between the FFPE DNA extracts and purified genomic DNA. The PCR products generated from sample 1 were diluted 1:10 and used directly in standard Sanger sequencing reactions. Sequence data (bottom panel, sample 1 exon 19 fragment) was of a high quality. The mixed sequence starting at the position marked with the arrow confirmed the presence of a 15-nt deletion associated with non-small cell carcinoma diagnosed in the patient from whom sample 1 was collected.

Efficient DNA extraction from blood sample types

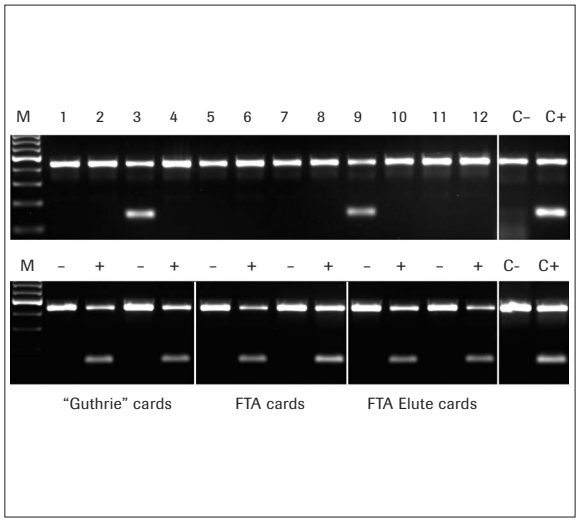


Figure 3: Routine extraction of DNA from a variety of blood sample types. Extraction and amplification of DNA from different blood sample types for detection of the HLA-B*27 allele. DNA was extracted from 12 human EDTA blood samples with KAPA Express Extract (top panel). 2 µL of each extract was added directly to a 25 µL PCR containing KAPA2G Robust HotStart ReadyMix and two primer sets. The internal control primer set targets a 429 bp fragment of the beta globin gene, whereas the second primer set targets a 141 bp fragment of the HLA-B*27 locus in a sequence-specific manner. Two of the 12 individuals tested positive for the HLA-B*27 allele associated with ankylosing spondylitis. Lanes C- and C+ represent HLA-B*27 negative and positive controls respectively (1 ng purified human genomic DNA as template). DNA was extracted from "Guthrie" cards, FTA cards, or FTA Elute cards (bottom panel) spotted with blood of individuals confirmed to be HLA-B*27 positive (+) or negative (-). DNA extraction and amplification conditions and controls (C- and C+) were the same as for the top panel.

Ordering information

Product	Pack size	Catalog number
KAPA Express Extract	1,000 reactions	08 041 253 001

Related products	Pack size	Catalog number
KAPA Probe Force qPCR Master Mix	10 ml	08 041 237 001
KAPA Probe Force qPCR Master Mix	50 ml	08 041 229 001
KAPA2G Robust HotStart PCR Kit	5 kU	08 041 121 001
KAPA2G Robust HotStart ReadyMix	12.5 ml	08 041 113 001

Reference

Data on file at Roche.

Regulatory disclaimer

For further processing only.

custombiotech.roche.com

Please contact your local CustomBiotech representative

Europe, Middle East, Africa, Latin America
Phone +49 621 759 8580
Fax +49 621 759 6385
mannheim.custombiotech@roche.com

United States
Phone +1 800 428 5433, ext. 14649 (toll-free)
Fax +1 317 521 4065
custombiotech.ussales@roche.com

Canada
Phone +1 450 686 7050
Fax +1 450 686 7012
custombiotech.can@roche.com

Japan
Phone +81 3 6634 1046
Fax +81 3 5479 0585
japan.custombiotech@roche.com

Asia Pacific
Phone +65 6371 6638
Fax +65 6371 6601
apac.custombiotech@roche.com

Published by
Roche Diagnostics GmbH
Sandhofer Straße 116
68305 Mannheim
Germany

© 2017 Roche Diagnostics GmbH
All rights reserved.