Lucigen®

Simplifying Genomics

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QuickExtract™ DNA Extraction Solution

Cat. No. QE0905T, QE09050

1. Introduction

QuickExtract™ DNA Extraction Solution provides a fast, simple, and inexpensive method for preparing genomic DNA for PCR amplification—all without the use of toxic chemicals or spin columns. DNA extraction requires only heat treatment to lyse the cellular or tissue material, release the DNA, and degrade compounds inhibitory to amplification. Following heat treatment, the sample DNA is ready for PCR. The procedure is easily scaled to process hundreds of samples in multiwell plates, using robotic automation systems.

Many publications support the use of QuickExtract DNA Extraction Solution with samples such as hair follicles, quill-end cells of feathers, tissue-culture cells, buccal cells, zebrafish organs and scales, mouse tail snips, and more.

The extracted DNA is suitable for PCR-based analysis, such as: genomic, transgenic, or viral DNA screening in animals; genetic or environmental research and screening in humans and other organisms; and CRISPR/Cas9 library screening.

QuickExtract DNA Extraction Solution is provided at 5 mL and 50 mL volumes, sufficient for 10 or 100 extractions, respectively.

2. Product Designations and Kit Contents

Product	Kit Size	Catalog Number	Reagent Description	Part Numbers	Volume
QuickExtract™ DNA Extraction Solution	5 mL (10 Extractions)	QE0905T	QuickExtract™ DNA Extraction Solution 1.0	SS000035-D1	5 mL
	50 mL	QE09050	QuickExtract™ DNA Extraction Solution 1.0	SS000035-D1	50 mL

3. Product Specifications

Storage: Store at –20°C in a freezer without a defrost cycle. Minimize the number of freeze/thaw cycles. Thawed QuickExtract solution can be stored at 4°C for 1 month or refrozen in small aliquots.

Quality Control: QuickExtract DNA Extraction Solution is function-tested by assaying for the production of a PCR product from a human X chromosomal marker, using a buccal cell DNA preparation as template.

4. Protocol

1. Label the appropriate number of tubes containing 0.5 mL of QuickExtract Solution.
2. Place one sample in each tube, for example:
   - 10^4 counted human cervical carcinoma tissue culture (HeLa) cells
   - a 0.5–1 cm region of a single plucked human hair with follicle
   - a 0.5–1 cm section of a mouse tail snip, finely diced using a fresh blade
   - one single *E. coli* colony picked from a plate
   - a 0.5–1 cm quill-end of a breast feather that was plucked and stored at 4°C
3. Mix by vortexing for 15 seconds.

4. Transfer the tube to a heat block at 65°C and incubate for 6 minutes (15 minutes for fingernails).
5. Mix by vortexing for 15 seconds.
6. Transfer the tube to a heat block at 98°C and incubate for 2 minutes.
7. Store the DNA at –20°C for up to 1 week, or at –70°C for longer periods.
8. Use 5 µL or less of the extracted DNA for each PCR amplification (see Figure 1).

5. Troubleshooting

1. If the PCR is unsuccessful using undiluted extract, try using a 1:10 dilution of the extract as template. While it may be counterintuitive to use less starting DNA material, better results are sometimes achieved by reducing the amount of potential PCR inhibitors in the reaction.
2. Optimization of the PCR may be necessary. The FailSafe™ PCR PreMix Selection Kit (Lucigen Cat. No. FS99060) provides a quick optimization procedure to increase success rates.

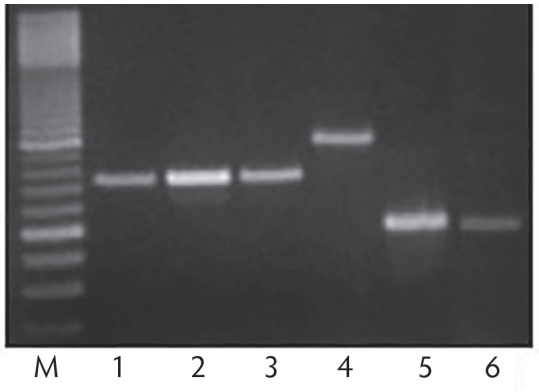

Figure 1. FailSafe™ PCR amplifications of genomic DNA isolated using the QuickExtract™ procedure. All samples were treated with QuickExtract™ DNA Extraction Solution. PCR was performed using primers to amplify the regions indicated: Lanes 1–3, human β-globin (from human buccal cells, HeLa cells, and human hair follicle, respectively); lane 4, transgenic mouse GAPDH (from mouse tail snip); lane 5, 16S ribosomal RNA gene (from *E. coli*); lane 6, transgenic SV40 T antigen (from mouse tail snip).