AMPLIQON
PCR ENZYMES & REAGENTS

# Direct lysis of fish fins using Q-Extract DNA Extraction Solution


## Overview

The Q-Extract DNA Extraction Solution (Ampliqon A/S) is designed for rapid and efficient extraction of PCR-ready DNA from mammalian tissues, plant leaves, bird feathers, bacteria and saliva. The non-toxic Q-Extract DNA Extraction Solution enables the extraction of DNA from mammalian tissues in just 8 minutes. The extraction protocol is divided into two simple heating steps, which can be directly followed by PCR analysis, such as screening and genotyping.
Here we describe an alternative Q-Extract protocol for the extraction of DNA from fish fins.

Q-Extract DNA Extraction Solution can be used for extraction of PCR-ready DNA from fish fin clips. The protocol is easy to handle and only requires 2 simple heating steps. The obtained fin clip lysates are ready for end-point PCR.

## Direct lysis method for fish fin clips

The fin clips are added into 2 ml tubes and covered completely with Q-Extraction DNA Extraction Solution (50 – 150 µl). The tubes containing the reactions are incubated at 70 ºC for 20 – 40 minutes. Hereafter the tubes are transferred to a new heating block at 98 ºC for 20 minutes.

## Screening or genotyping using end-point PCR

After cooling down, the lysates are ready for end-point PCR. We recommend the use of Taq DNA Polymerase 2x Master Mix RED or TEMPase Hot Start DNA Polymerase 2x Master Mix BLUE for end-point PCR. Combination packages are available, see ordering information p. 2.

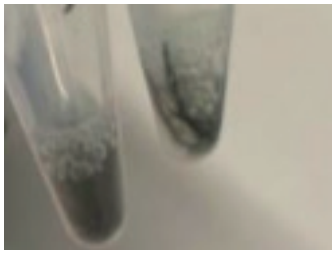

**Figure 1.** Fish fin clip lysates

**Figure 2.** Q-Extract DNA Extraction Solution were used the extraction of PCR-ready DNA from Zebra fish fin clips (D. *rerio*). The tubes containing the reactions were incubated at 70 ºC for 20 minutes.

Hereafter the tubes are transferred to a new heating block at 98 ºC for 20 minutes. 1 µl of the obtained lysates were used for amplification of three different gDNA targets; Filip (lane 1), Tyr (lane 2) and Abhd (lane 3). As control Wild type D. *rerio* gDNA was used for amplification of the Abhd DNA target (lane 4).

The amplification was run on Veriti™ 96-Well Thermal Cycler (Applied Biosystems™). Additional information about each lane can be found in table 1. The PCR setup and the applied PCR program can be found in table 2 and table 3, respectively.

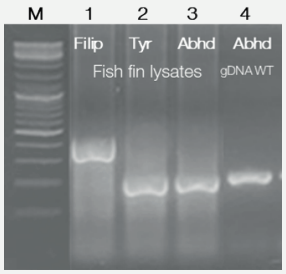


**Table 1. Lanes used for end-point PCR**

| Lane | Lysates | | DNA target |
|---|---|---|---|
| 1. | 1_ Fin clips | 20 min | Filip |
| 2. | 1_ Fin clips | 20 min | Tyr |
| 3. | 1_ Fin clips | 20 min | Abdh |
| 4. | gDNA WT 25 ng/µl | | Abdh |

**Table 2. PCR setup**

| Component | Volume | Conc. |
|---|---|---|
| Master Mix | 6.25 µl | 1x |
| Forward primer | 0.125 µl | 0.2 µM |
| Reverse primer | 0.125 µl | 0.2 µM |
| Lysate | 1 µl each | |
| PCR Grade Water | 5 µl | |
| Total volume | 12.5 µl | |

**Table 3. PCR program**

| Cycles | Temp. | Time |
|---|---|---|
| 1 | 95 ºC | 15 min |
| 15 | 95 ºC<br>*72 ºC<br>72 ºC | 30 sec<br>30 sec<br>30 sec |
| 25 | 95 ºC<br>58 ºC<br>72 ºC | 30 sec<br>30 sec<br>30 sec |
| 1 | 72 ºC | 30 min |
| 1 | 12 ºC | End |

*Touch down -1 ºC pr. cycle.

## Extraction Protocol Fish Fin Clips

1. Ad fish fin clips to a 2 ml tube*.
2. Cover the fin clips with 50 – 150 µl of Q-Extract DNA Extraction Solution. Make sure that the fin clips are completely covered.
3. Transfer the tube to a heat block or a thermal cycler and incubate for
    1. 70 °C for 20 - 40 min
    2. 98 °C for 20 min
    3. 4 °C (or cool down on ice)

The DNA extract is now ready for PCR.

DNA extracts are stable at -20 °C for one week or long-term storage at -80 °C.

*If the fish fin samples are preserved in ethanol, then the ethanol must be removed before the DNA extraction. Place the 2 ml tubes containing the fin clips in a heating block set at 80 - 90 ºC until no traces of EtOH are visible or can be smelled.

## Ordering information

| Product | RXN* | Cat # |
|---|---|---|
| Q-Extract DNA Extraction Solution | 100<br>500 | A560001<br>A560004 |
| Q-Extract DNA Extraction PCR Kit<br>Incl. Taq DNA Polymerase<br>2x Master Mix RED | 100<br>500 | A570001<br>A570004 |
| Q-Extract DNA Extraction Hot Start PCR Kit<br>Incl. TEMPase Hot Start DNA Polymerase<br>2x Master Mix A BLUE | 100<br>500 | A574401<br>A574404 |
| SAMPLES:<br>Q-Extract DNA Extraction Solution<br>Q-Extract Genotyping PCR Kit. Incl. Taq DNA Polymerase 2x MM RED & TEMPase Hot Start DNA Polymerase 2x MM A Blue | <br>20<br>20 | <br>A560099<br>A57TT99 |

* 1 reaction = 100 µl Q-Extract DNA Extraction Solution + 12.5 µl Taq DNA Polymerase 2x Master Mix RED or TEMPase Hot Start DNA Polymerase 2x Master Mix A BLUE (final PCR reaction 25 µl)

Q-Extract DNA Extraction Solution

Q-Extract DNA Extraction PCR Kit

Q-Extract DNA Extraction Hot Start PCR Kit

PCR ENZYMES MADE IN DENMARK

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