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♠ Lakes ABPS Protocol - Optimized protocol for the extraction of fish DNA from freshwater sediments (Thomson-Laing et al., 2022)

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Protocol status: Working

We use this protocol and it's working

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Keywords: lakes abps protocol, lake sediment samples by an alkaline lysis method, fish dna from freshwater sediment, fish seddna from surface sediment, comparison of multiple seddna extraction method, lake sediment, range of lake sediment, multiple seddna extraction method, freshwater sediment, detecting fish seddna, protocol for the extraction, fish dna, sediment sample, surface sediment, abps protocol, optimized abps protocol, alkaline buffer, highest concentrations of target genet, extraction, alkaline lysis method, lake, sediment, multiple powersoil extraction, dna, abp

Abstract

DNA was extracted from lake sediment samples by an alkaline lysis method with ethanol precipitation adapted from method described by Kuwae et al. (2020); Sakata et al. (2020b); Sakata et al. (2020a).

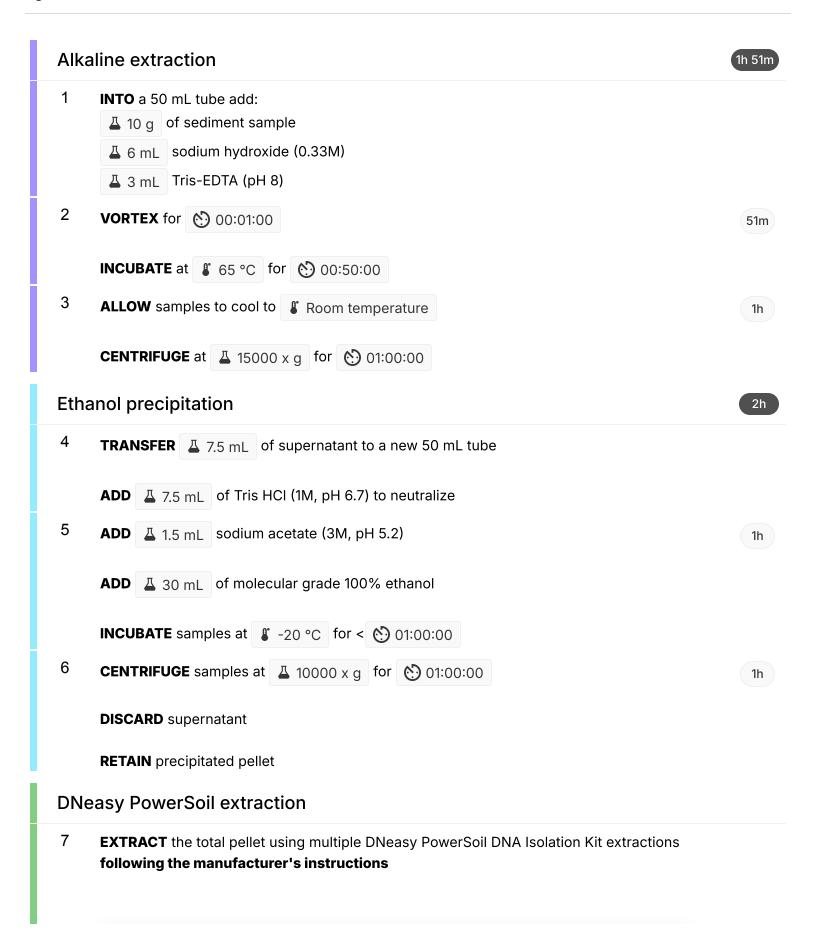
In a comparison of multiple sedDNA extraction methods, the ABPS (Alkaline buffer - power soil) protocol yielded the highest concentrations of target genets across a range of lake sediments. This protocol was further optimized (65C incubation temperature, pooling of multiple PowerSoil extractions) to overcome technical challenges related to co-precipitation of organic content in lake-surface sediments.

The optimized ABPS protocol is called the "Lakes ABPS protocol"

This protocol has proven to be successful at detecting fish sedDNA from surface sediments in multiple systems for multiple species.

Troubleshooting







Note

△ 0.25-0.5 g of pellet per extraction

POOL resultant DNA elutes

DNA is now ready for downstream applications

Protocol references

Thomson-Laing, G., Howarth, J. D., Vandergoes, M. J., & Wood, S. A. (2022). Optimised protocol for the extraction of fish DNA from freshwater sediments. Freshwater Biology, 67,1584–1603. https://doi.org/10.1111/fwb.13962