

DNA extraction from fetal and neonatal pathology tissues at the West Midlands Regional Genetics Laboratory, UK

CONTEXT

The West Midlands Regional Genetics Laboratory (WMRGL) is an NHS diagnostic laboratory providing testing for a wide range of **genetic disorders**. **Fetal and perinatal pathology tissue samples** are analyzed for chromosome abnormalities by QF-PCR and subtelomere MLPA. Prior to the introduction of the Precellys 24 these tissue samples were finely chopped using a scalpel, digested for >24 hours followed by a manual salting out DNA extraction procedure.

MATERIAL

- Precellys 24 homogenizer vs Proteinase K method.
- Precellys lysing kit: 03961-1-003 (CK14).
- Sample: 0.5 cm² of fetal or neonatal tissue e.g. skin or placental villi.
- Buffer: 190 µl Qiagen EZ1 G2 buffer.
- Proteinase K (600 mAU/ml).

PROTOCOL

- Precellys 24 parameters: 5500rpm, 3x10 sec (15 sec break time).
- Enzymatic method: Incubate overnight at 37°C with 10µl Proteinase K.
- Analysis: DNA extraction by Qiagen EZ1 robot or by manual salting out DNA extraction procedure.



03712-810-DU064



CONCLUSION

The **Precellys 24** extraction method has several advantages to the former method used including: speed, reduced staffing time, higher throughput, more uniform results and improved safety.

RESULTS

DNA was extracted by Qiagen EZ1 robot using the tissue protocol.

The results are reported in the figure 1.

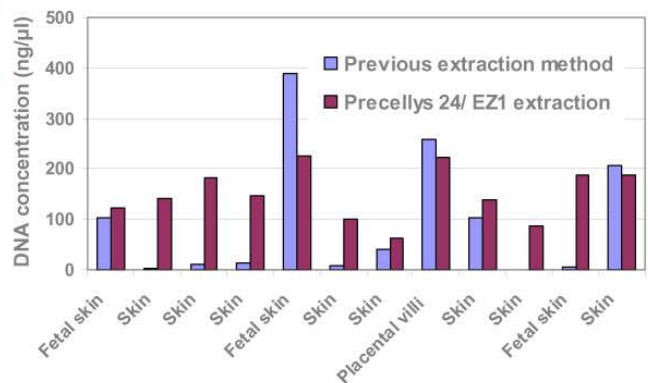


Figure 1: Concentration comparison of previous extraction method to Precellys®/EZ1 extraction.

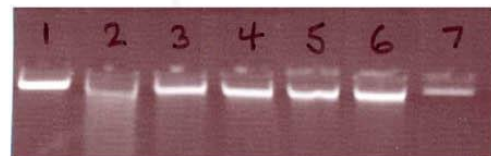


Figure 2: Agarose gel image of DNA extracted by Precellys 24 / EZ1 extraction. Samples showed no or minimal DNA degradation.



For more details, please contact precellys@bertin.fr



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