

DNA extraction from *Arabidopsis* leaves using Precellys® Evolution vs Precellys®24-Dual PEQLAB, Erlangen, Germany

CONTEXT

The new Precellys® Evolution is even more powerful (up to 10000 rpm) and versatile (0.5, 2.0, 7.0 and 15 ml tubes). Increased grinding power is beneficial for tough or stringy tissues. However, for soft tissues it is known that too much power can lead to degradation of target molecules like DNA.

Therefore the goal was to compare DNA quality (integrity) and quantity (yield) after homogenization of *Arabidopsis* leaves by Precellys® Evolution or Precellys®24-Dual at given rpm.

MATERIAL

- Precellys® Evolution and Precellys®24-Dual.
- Precellys lysing kit: CKMix_2mL (KT03961-1-009.2).
- Sample: 100 mg of *Arabidopsis* leaves per prep.
- Buffer: 100 µl TE (pH 8.0).

PROTOCOL

- Precellys® Evolution: 4600, 5900, 7200, 8200, 8800, 10000 rpm; 1 x 20 sec.
- Precellys®24-Dual: 4000, 5000, 6000, 6500 rpm; 1 x 20 sec.
- DNA was isolated using peqGOLD Plant DNA Kit and analyzed by agarose gel electrophoresis for quantity (yield) and quality (integrity/degradation).



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CONCLUSION

The homogenizer Precellys® Evolution is suitable and convenient for DNA extraction from plant leaf tissue. Yield and quality is independent of rpm in the range of 4600 up to 8800 rpm.

Precellys® Evolution is an efficient high-throughput homogenizer that is a perfect tool for quickly generating high quality plant extracts for genomic studies.

RESULTS

The gel picture obtained for Precellys® Evolution (Fig. 1) shows that the yield and quality is comparable in the range of 4600 – 8800 rpm, whereas degradation was observed at 10000 rpm.

The gel picture obtained for Precellys®24-Dual (Fig. 2) confirms that no degradation is observed up to 6500 rpm. Average yield was 2 µg DNA.

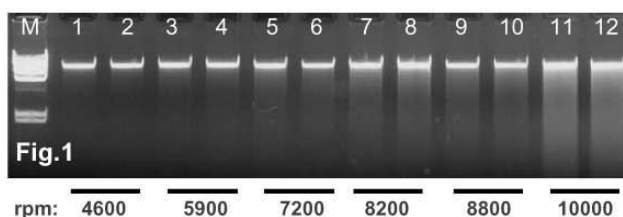


Figure 1: Agarose gel (1.5%, 1xTAE) electrophoresis of DNA isolated from *Arabidopsis* leaves homogenized with Precellys® Evolution at given rpm. M = DNA size II

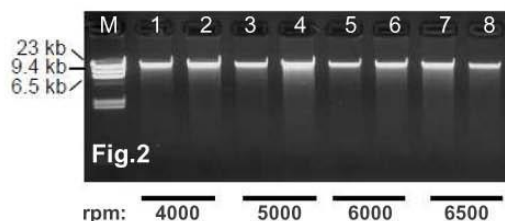


Figure 2: Agarose gel (1.5%, 1xTAE) electrophoresis of DNA isolated from *Arabidopsis* leaves homogenized with Precellys® 24-Dual at given rpm. M = DNA size II

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