

RNA extraction from Cheese in 7mL Vial

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CONTEXT

In order to improve our understanding of the activity of the cheese microbial flora (bacteria, yeasts and molds) one promising approach is in situ analysis of the mRNA transcripts. However, even if extraction for DNA from cheese is common, the extraction of RNA is still a challenge. In this way, the Precellys®24-Dual was evaluated to increase the yield of RNA extraction from cheeses.

MATERIAL

- Precellys®24-Dual.
- Precellys® 7mL kit (empty vial): Ref.1005-01.
- 0.1 mm and 0.5 mm Zirconium beads.
- Samples: Ripened cheese.

PROTOCOL

- Precellys®24-Dual protocol : 500 mg of ripened cheese + 5 ml Trizol / 7mL vial + 1.6 g zirconium beads of 0.1 mm + 1.6 g zirconium beads of 0.5 mm, 6500 rpm 2x20 s (pause: 15 s).
- Subsequent RNA purification was done as described previously [1].
- Analysis: Bioanalyzer (Agilent).

RESULTS

The following electropherogram (Fig.1) shows the presence of yeast ribosomal RNA (18S and 25S) and bacteria ribosomal RNA (16S and 23S) extracted from ripened cheese after 1 month of aging. The yield is 75 µg of RNA per gram of ripened cheese.

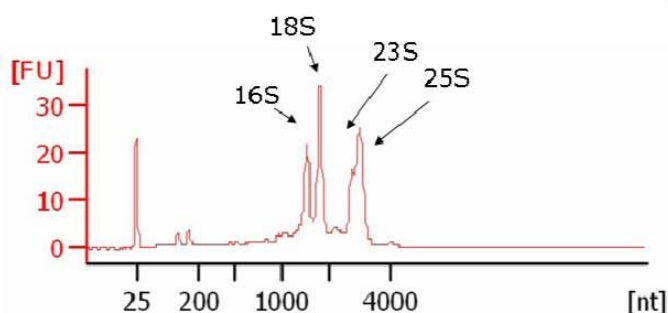
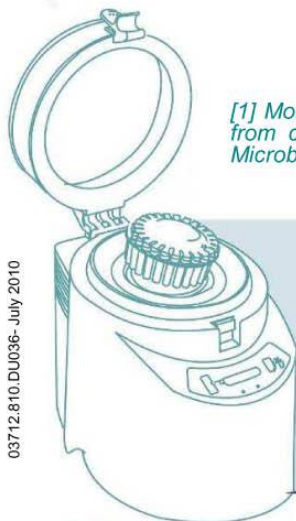


Fig.1: RNA quality assessment with the Agilent bioanalyser: electropherogram of RNA preparation from ripened cheese after 1 month of ageing.

The RNA quality and integrity are optimal to study the cheese microbial flora.

[1] Monnet C, Ulvè V, Sarthou A-S, Irlinger F. (2008) Extraction of RNA from cheese without prior separation of microbial cells. *Appl Environ Microbiol* 74: 5724-5730



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CONCLUSION

The Precellys®24-Dual is successfully validated for extraction of total RNA with high yield of extraction in 7mL vials.

Precellys®24-Dual is robust even after intensive use. We appreciate the possibility to use both 2mL tubes (1.5mL final volume) or 7mL tubes (5mL final volume). Easy handling, reproducibility and high throughput are appreciated.

For more details, please contact precellys@bertin.fr



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