Promega

Product Application

DNA Extraction from Samples Containing Gelatin using the Maxwell® RSC System

DNA was successfully purified from samples containing gelatin using the Maxwell® RSC PureFood GMO and Authentication Kit. Extracted DNA was suitable for speciation applications.

Kit: Maxwell® RSC PureFood GMO and Authentication Kit (Cat.# AS1600)

Analyses: Quantitation by absorbance and with fluorescent dye, qPCR amplification

Sample Type(s): Aspic, gelatin sheet, capsules and candy

Input: Up to 100mg

Materials Required:

- Maxwell® RSC Instrument (Cat.# AS4500)
- Maxwell® RSC PureFood GMO and Authentication Kit (Cat.# AS1600)
- Ffrozen mortar and pestle
- heat block

This protocol was developed by Promega Applications Scientists and is intended for research use only.

Users are responsible for determining suitability of the protocol for their application.

For further information, see Technical Manual TM473, available at: **www.promega.com/protocols**

or contact Technical Services at: **techserv@promega.com**

Protocol:

1. Grind sample using a frozen mortar and pestle.
2. Add 600µl of CTAB Buffer, 2µl of RNase A Solution and 30µl of Proteinase K (PK) Solution to each tube containing up to 100mg of sample.
3. Tap and vigorously vortex tubes.
4. Place in a heat block at 60°C for 30 minutes with shaking at 600rpm.
5. During the incubation step, prepare RSC cartridges as indicated in the Technical Manual (TM473). Add 50µl of Elution Buffer to the elution tubes.
6. Vortex tubes with lysate to mix thoroughly.
7. Centrifuge the tubes at room temperature for 10 minutes at ≥16,000 × *g* to separate any solid and oils.
8. Add 300µl of Lysis Buffer and 300µl of cleared lysate to well #1 of the cartridge. Avoid pipetting any solid or oils.
9. Place the cartridges in the deck tray, and run the Maxwell® RSC PureFood GMO and Authentication protocol.

Results:

Table 1. DNA concentration and purity ratios of DNA extracted from 100mg of samples containing gelatin using the Maxwell® RSC PureFood GMO and Authentication Kit (Cat.# AS1600)**.** DNA concentration and purity ratios were assessed by absorbance with NanoDrop® One Spectrophotometer and using the QuantiFluor® ssDNA System (Cat.# E3190).

Sample	NanoDrop (ng/µl)	QuantiFluor® ssDNA (ng/µl)
Aspic	117.78 ± 19.6	97.88 ± 15.64
Gelatin sheet	9.97 ± 0.56	0.29 ± 0.01
Capsule	21.51 ± 3.15	8.31 ± 1.66
Candy	9.81 ± 2.36	0.47 ± 0.14

Table 2. qPCR amplification of DNA extracted from 100mg of samples containing gelatin using the Maxwell® RSC PureFood GMO and Authentication Kit (Cat.# AS1600). Five microliters of extracted DNA at 10ng/µl was amplified using RapidFinder™ Pork ID (Thermo Fisher ref. A24392) and RapidFinder™ Beef ID kit (Thermo Fisher ref. A24391). Results: + (amplification), – (no amplification).

Sample	RapidFinder™ Pork ID kit	RapidFinder™ Beef ID kit	Expected origin of gelatin
Aspic	+	–	Pork
Gelatin sheet	+	–	Pork
Capsule	–	+	Unknown
Candy	+	–	Unknown