Promega

Product Application

DNA Extraction from Rice Kernels using the Maxwell® RSC System

Isolate high-quality, amplifiable DNA from rice kernels using the Maxwell® RSC Instrument.

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

Analyses: GoTaq® qPCR, QuantiFluor® ONE dsDNA System and NanoDrop® One quantitation

Sample Type(s): Rice kernels from white and brown Basmati rice, Thaï rice and round rice.

Input: Up to 200mg of ground or whole kernels or single kernel

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**

Materials Required:

- Maxwell® RSC PureFood GMO and Authentication Kit (Cat.# AS1600)
- Maxwell® RSC Instrument (Cat.# AS4500)
- heat block
- cooking grinder or other grinding apparatus
- microcentrifuge
- 2.0ml tube

Protocol:

Ground kernels (recommended for round and brown rice): Grind kernels in a cooking grinder. Weigh up to 200mg of ground kernel into a 2ml tube.

Whole kernels: Weigh up to 200mg of whole kernels into a 2ml tube.

Single kernels: Place a single kernel into a 2ml tube.

1. Add 1ml of CTAB buffer, 40µl of Proteinase K and 20µl of RNase A Solution to prepared rice kernels.
2. Vortex vigorously and incubate 30 minutes at 65°C while shaking at 600rpm.
3. Centrifuge 10 minutes at 12,000 × *g*.
4. Pipet 300µl of sample supernatant and 300µl of Lysis Buffer into well #1 of the Maxwell® RSC cartridge.
5. Add plungers into well #8 of each cartridge.
6. Place the supplied elution tubes into the sample rack, and add 100µl of the supplied elution buffer.
7. Select the PureFood GMO and Authentication method and start the Maxwell® RSC Instrument.

Results:

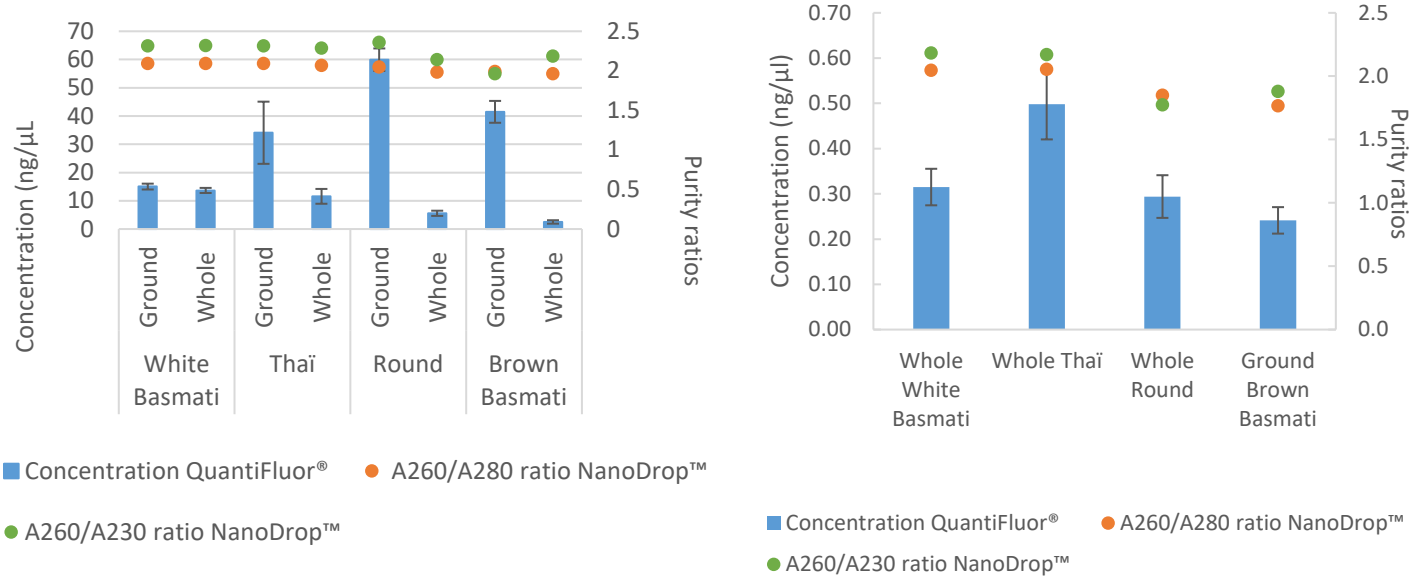

Figure 1. DNA concentration from 200mg of ground and whole rice kernels (left) and from single ground or whole rice kernels (right) based on quantitation using the QuantiFluor® ONE dsDNA Kit (Cat.# E4870) and purity ratios based on NanoDrop® One measurements. N=3.

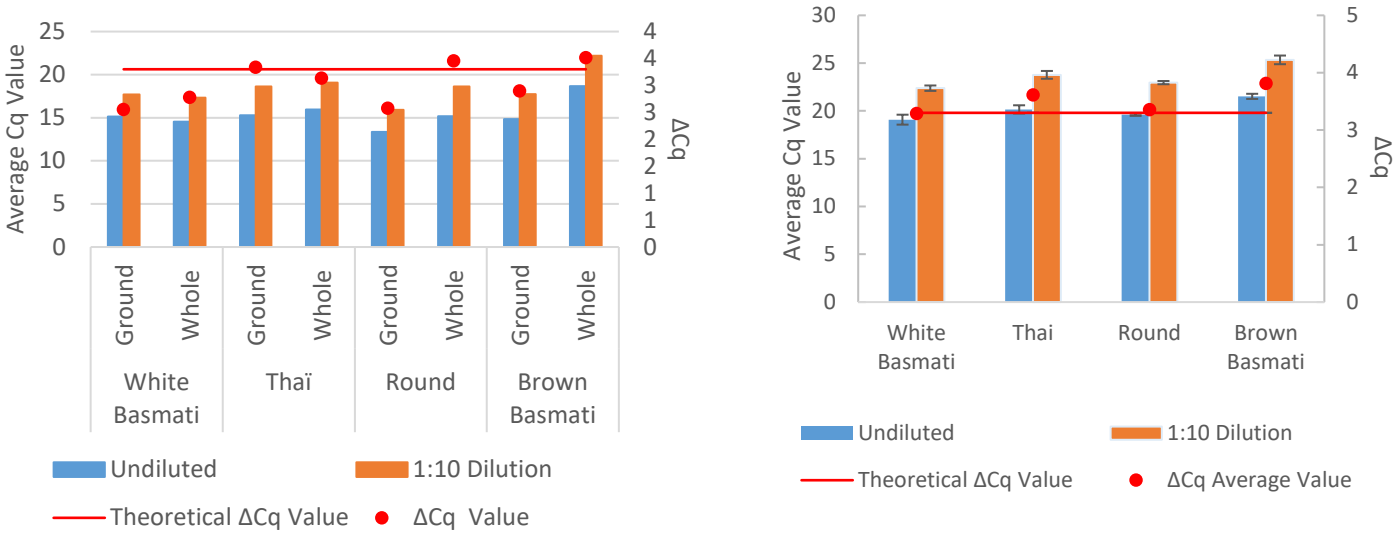

Figure 2. qPCR analysis of DNA extracted from 200mg of ground and whole rice kernels (left) and from single rice kernel samples (right). Cq and ΔCq values for 2µl of undiluted and 1:10 dilution of the extracted DNA amplified using GoTaq® qPCR Master Mix (Cat.# A6002) and universal plant primers (1) in a final volume of 20µl. ΔCq = 3.3 indicates no inhibitors presence. N=3.

Reference:

1. Wang *et al*. (2011) Universal endogenous gene controls for bisulphite conversion in analysis of plant DNA methylation. *Plant Methods* **7**, 39.