Quick-Start Protocol March 2022

Microbiome stabilization using PowerProtect DNA/RNA reagent

This protocol describes how to use the PowerProtect DNA/RNA reagent (cat. nos. 14800 and 14810) for stabilization of bacterial DNA and RNA in stool samples before nucleic acid extraction.

The PowerProtect DNA/RNA should be stored at room temperature (15–25°C) and is stable under these conditions.

Further information

- *PowerProtect DNA/RNA Handbook*: **www.qiagen.com/HB-3043**
- Safety Data Sheets: **www.qiagen.com/safety**
- Technical assistance: **support.qiagen.com**

Equipment supplied by user

- PBS
- Stainless Steel Beads, 5 mm (200) (cat. no. 69989) or 7 mm (200) (cat. no. 69990)
- Container

Important point before starting

- The PowerProtect DNA/RNA reagent may form precipitate during storage below room temperature (15–25°C). Before using the reagent, redissolve the precipitate by heating to 37°C with agitation. Please note that this only applies before using the reagent for sample stabilization.
- **Note**: When choosing a container for sample storage, also consider the volume of PBS that needs to be added to the sample after storage (see Step 1 under "To proceed with nucleic acid extraction").
- **Note**: Ensure that the container chosen can be centrifuged for later purification.

Procedures

To stabilize the sample

1. Place the stool material in an appropriately sized container.
2. Add at least 4 volumes of PowerProtect DNA/RNA reagent to 1 volume of sample (e.g., for 500 mg sample, add 2 ml PowerProtect DNA/RNA reagent).

   Note: We recommend using up to 9 volumes of reagent for dry stool samples.

   Note: In general, use of higher volumes of PowerProtect DNA/RNA reagent (up to 9 volumes) facilitates mixing the stool material with the reagent and submerging the stool material completely in the reagent.
3. Add up to 3 stainless steel beads (5 or 7 mm) to the container.
4. Mix by shaking and inverting until sample forms a slurry.

The sample is ready to be stored. The PowerProtect DNA/RNA reagent stabilizes nucleic acids at room temperature, 4°C, or –20°C for extended periods. The PowerProtect DNA/RNA reagent also stabilizes nucleic acids at higher temperatures for shorter durations. See the handbook for additional details.

To proceed with nucleic acid extraction

1. Add PBS in a volume 1.5 times greater than the volume of the PowerProtect DNA/RNA reagent used (e.g., if 2 ml of PowerProtect DNA/RNA reagent was used, add 3 ml PBS). Invert to mix.
2. Centrifuge for 10–20 min at 5000 x *g*. Remove the supernatant completely.

   Note: In general, centrifugation for 10 min is sufficient. If the sample is not sufficiently pelleted, this process can be repeated.

   Note: The use of wide-bore pipette tips or regular tips from which the end was cut off might facilitate removal of the supernatant.
3. Use pellet for nucleic acid extraction.