NEXTADVANCE

Protocol: *Apis mellifera* (Honeybee) Homogenization in the Bullet Blender®

The protocol described in this document is for the use of the Bullet Blender® for the homogenization of *Apis mellifera* thoraces, although should be suitable for whole bees or other honeybee sections or tissues as well. This protocol was created for the extraction of DNA, and does specify a particular buffer, however you may modify it in any way necessary to tailor it to your needs (RNA extraction, protein purification, etc.).

Materials Required: *Apis mellifera*, Bullet Blender®, homogenization buffer, pipettor, microcentrifuge tubes, and 1.0mm glass beads (part number GB10).

Instructions

1. Wash *A. mellifera* in PBS or other buffer, as appropriate, to remove food, surface bacteria, and other contaminants.
2. Isolate the thorax using a scalpel and forceps.
3. Place each thorax, individually, into a microcentrifuge tube.
4. Add 100mg of 1.0mm glass beads to the tube.
5. Add 600µl of lysis buffer (100 mM Tris, pH 8.0,10 mM EDTA, pH 8.0, and 1% SDS).
6. Close the microcentrifuge tubes.
7. Place tubes into the Bullet Blender®.
8. Set controls for **SPEED 8** and **TIME 3** minutes.
9. Remove tubes from the instrument.
10. Visually inspect samples, if homogenization is unsatisfactory, run for another two minutes at the **SPEED 10.**
11. Proceed with your downstream application.

SAFETY NOTE!!!

When using a centrifuge to separate your homogenate from the debris and beads, make sure your tubes are balanced.

Reference:

Bourgeois, A.L., Rinderer, T.E. Genetic Characterization of Russian Honey Bee Stock Selected for Improved Resistance to *Varroa destructor*. J. Econ. Entomol. 102(3):1233-1238. 2009

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