

Instructions for the Mini-BeadBeater-16

Preparation of Sample

Use 0.1 mm beads for bacteria, 0.5 mm beads for yeast, fungi and tissue culture cells and 1.0 mm or 2.5 mm beads for fresh plant and animal tissue. If you have solid tissue, pre-chop it into pieces having approximate 1mm cross-section with a single-edge razor blade or fragment the tissue at liquid nitrogen temperatures with a [BioPulverizer](#). Up to 400 mg (wet wt) of biomaterial can be disrupted per ml of extraction media. In most applications, beads made of glass or zirconia-silica give excellent results. In special cases (grinding dry leaf material, wet grinding soaked seeds, disrupting skin or cartilage) beads made of denser material such as zirconia or steel may be required.

Fill the 2 ml screw-cap [microtube](#) one-half to two-thirds full with beads. Then add extraction media and cells, being sure to fill the microtube almost to the top. Exclude as much air from the microtube as possible. Use screw-cap microtubes with integral o-ring seals in order to eliminate aerosol formation during the homogenization. Be sure there are no beads on the threads of the microtubes when screwing down the cap.

(CAUTION - snap-top microtubes release aerosol. Nevertheless, it is possible to use snap-top microtubes in the MBB-16. An accessory adapter ring will be required.)

Operating the Mini-BeadBeater

Insert 1 to 16 microtubes into the holder. Distribute them symmetrically as you would do with a centrifuge. If using less than 4 sample vials, insert "blank" vials so that at least four vials are in the holder. Screw in the black plastic chamber cap until it is in contact with the tops of the microtube caps. Tighten the lid by hand so the vials are firmly held in place. Do not overtighten.

Set the timer. A typical setting for cell disruption is 3 minutes. Start the machine by pressing the white button in the center of the timer dial. The timer dial resets itself automatically at the end of the run. (Note: If you are working with heat-sensitive material, consider homogenizing for a shorter period, say 1 minute, then remove the vial holder with its vials and cooling the vials in ice-water for 1 minute. Cycle thus for a total "On" time of three minutes. Nucleic acid extraction does not need require cooling.

(CAUTION - While the MBB-16 is running, changing the Timer setting will damage the timer. If you must change the time setting while the MBB-16 is running, press and hold down the white start button while changing the position of the timer dial.)

Safety Concerns

Operate the MBB-16 with the black plastic hood over the chamber. This prevents the user from coming in contact with the shaker during operation and will help trap anything should it break free.