

Protocol for *Saccharomyces* Homogenization in the Bullet Blender™

The protocol described in this document is for the use of the Bullet Blender™ for the homogenization of *Saccharomyces* cultures (*cerevisiae*, *pombe*, etc.). This protocol does not specify a particular buffer - you may choose which is most appropriate for your downstream application (nucleic acid isolation, protein extraction, etc.).

Materials Required: yeast, aspirator, Bullet Blender™, homogenization buffer, pipettor, microcentrifuge tubes, [zirconium oxide beads \(0.15mm\)](#) or [stainless steel beads \(0.2mm\)](#)

Instructions

1. Pour yeast culture into a microcentrifuge tube.
2. Centrifuge culture to yield a cell pellet (1000g for two minutes).
3. Completely aspirate the supernatant liquid. Place tube on ice.
4. Inspect the volume of the pellet. It should be 300µL or less in order to get efficient homogenization.
5. Add a volume of 0.15mm zirconium oxide beads to the tube equal to the volume of the pellet. See **NOTES** below.
6. Add 0.1mL to 0.6mL buffer (2 volumes of buffer for every volume of cells).
7. Close the microcentrifuge tubes.
8. Place tubes into the Bullet Blender™.
9. Set controls for **SPEED 8** and **TIME** to **4** minutes. Press **Start**.
10. After the run, remove tubes from the instrument.
11. Inspect samples. If homogenization is unsatisfactory, run for another two minutes at **SPEED 10**.
12. 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.

NOTES

Different species of yeast and different applications will be amenable to different bead types. Cell density, cell size, and buffer composition will affect homogenization and variation of the bead selection is an easy way to empirically determine what works best.