Catalog #625

PCR EdvoBeads™

for 25 Reactions

STORAGE:

Store at room temperature with desiccant. In high humidity regions, place in a desiccator. Once opened, reseal vial with rubber stopper as quickly as possible and store vial in a desiccator between uses.

About NEW PCR EdvoBeads™

PCR EdvoBeads provide the reagents for PCR reactions in a convenient ambient-temperature-stable bead. PCR Beads have been optimized for PCR reactions and contain buffer, nucleotides and *Taq* DNA Polymerase. The only reagents that must be added to the reaction are template DNA and specific primers.

Using the NEW PCR EdvoBeads™

NOTE:
Have ALL reagents ready for PCR prior to transferring the bead to the tube.

1. Obtain a thin-walled PCR tube (0.2 ml or 0.5 ml, depending on your thermal-cycler block size). Label accordingly.
2. Add appropriate volume of DNA template (extracted DNA or control) and Primer mix to the PCR tube. Adjust final volume to 25 µl with sterile, ultrapure water.
3. Open one vial of PCR EdvoBeads™ (carefully remove metal crimp) and gently/slowly remove the gray rubber stopper.

   Note *– The beads are vacuum-sealed and may move around once the stopper is removed.*

4. Use the inoculating loop to carefully remove a single bead and transfer to the tube containing the DNA template and primer. Cap the tube and gently mix, making sure the PCR EdvoBead™ is completely dissolved.

   Note *– If a bead falls onto a clean lab bench, gently pick it up with the loop or clean forceps and transfer to the tube with DNA template and primer. If the bead happens to fall onto the floor, discard it and obtain a clean bead.*

5. Once all the reagents have been added to the tube, quick-spin the tube(s) in a microcentrifuge OR carefuly shake the tube in a downward motion to collect the contents at the bottom of the tube. The tube is now ready for PCR.
6. Transfer the labeled tubes to the thermalcycler and begin the program.

The Steps for Thermal Cycling Conditions

PCR consists of multiple cycles of denaturation (95° C), annealing (40-60° C) and elongation (72° C). An initial denaturation step (95° C for 5 minutes) is necessary to completely denature the template DNA. We also recommend a final extension step (72° C for 5 minutes) to allow *Taq* Polmerase to complete any unfinished copies.

Primer/Template Recommendations

PCR primers should be 15-30 bp long with a GC content of approximately 50%. A PCR reaction should contain template DNA at <1 µg and primers at 0.2 - 1.0 µM. The optimal amount of template and primers must be determined empirically for each new template/primer combination.

* The PCR process and *Taq* DNA polymerase are covered by patents owned by Hoffman-LaRoche, Inc.
** *Taq* DNA polymerase is purchased from a licensed distributor.

We recommend a reaction volume of 22-55 µl for plasmid DNA and 25-40 µl for genomic DNA. Volumes greater than recommended will decrease the performance of the PCR EdvoBeads™. Please note that high amounts of salts, detergents, and common PCR additives can inhibit Taq polymerase. The table, at right, contains guidelines for use of some common PCR additives and reagents used for DNA extraction.

Additive	Genomic DNA	Plasmid DNA
Betaine	< 0.35 M	< 0.35 M
DMSO	< 3.5%	< 6%
EDTA	< 0.3 mM	< 0.3 mM
KCl	< 20 mM	< 30 mM
Mg^{2+} (as $MgCl_2 \cdot 6H_2O$)	< 3 mM	< 3 mM
NaCl	< 15 mM	< 25 mM
NP-40	< 5%	< 5%
SDS	< 0.01%	< 0.01%
TMAC	< 20 mM	< 30 mM
Triton X-100	< 2%	< 2%
Tween-20	< 5%	< 5%