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DNA*Zap*™ Solutions

PCR DNA degradation solutions

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Contents	Quantity	Storage conditions
Solution 1	250 mL	Room temperature (15°C to 30°C) for several months. For optimal activity over longer periods of time, store at 2°C to 8°C.
Solution 2	250 mL	

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from **www.lifetechnologies.com/support**.

Product description

DNA*Zap*™ Solutions are a pair of reagents that contain ingredients capable of degrading high levels of contaminating DNA and RNA from all types of surfaces. They are designed for the prevention of DNA contamination in PCR applications. The two solutions are, by themselves, innocuous. Upon mixing, however, they form a potent, short-lived nucleic acid degrading intermediate. When 500 ng of template DNA is dried down in a PCR tube, it is rendered unamplifiable upon treatment with DNA*Zap*™ Solutions. Additional experiments demonstrate that the DNA is degraded down to free nucleotides.

Using DNA*Zap*™ Solutions

Procedure overview

The DNA*Zap*™ Solutions are ready to use. Treat the surface to be cleaned with Solution 1 and then immediately apply Solution 2 over Solution 1. Rinse thoroughly with distilled water to remove any degraded nucleic acid and DNA*Zap*™ mixture residue that might be inhibitory to enzymatic reactions. Do not re-use the Solutions.

Procedure guidelines

- When using the aerosol attachment, always work in the fume hood. Since the full toxic effects of the aerosol mixture are not known, do not spray the two solutions simultaneously. Consult the MSDS for further safety instructions.
- DNA*Zap*™ Solutions contain metal ions which may be of concern if a decontaminated vessel, piece of equipment, or apparatus will be used for an experiment which is sensitive to trace amounts of metals. Although thoroughly rinsing with distilled water after DNA*Zap*™ mixture treatment is usually sufficient to remove any trace metals, you can add a 0.1% EDTA rinse as an extra precaution. Follow the EDTA rinse with several distilled water rinses.

Guidelines for treating specific surfaces

Surface	Instructions
Work surfaces	1. Spray or apply Solution 1 to the surface to be cleaned. 2. Repeat with Solution 2. 3. Wipe with clean paper towels, 4. Rinse twice with distilled water and wipe dry with clean paper towels.
Lab equipment	1. Spray or apply Solution 1 to the equipment to be cleaned. 2. Repeat with Solution 2. 3. Rinse with distilled water and wipe dry. **Note:** Clean small parts by briefly soaking them in a freshly prepared mixture of the two solutions, rinse with distilled water, and dry.
Plastic and glass vessels	1. Spray or apply Solution 1 to coat the entire surface of the vessel. 2. Follow with Solution 2. 3. Agitate the vessel briefly to make sure that the DNA*Zap*™ Solutions thoroughly cover the surface, then discard the DNA*Zap*™ mixture. 4. Rinse thoroughly several times with distilled water.
PCR tubes	1. Spray or apply Solution 1 to the tubes. 2. Repeat with Solution 2. 3. Briefly vortex, centrifuge, and discard the DNA*Zap*™ mixture. 4. Add distilled water, briefly vortex, centrifuge and discard.

Surface	Instructions
Pipettors	1. Spray or apply Solution 1 directly on the pipettor. 2. Repeat with Solution 2. 3. Rinse thoroughly with distilled water. **Note:** For more thorough cleaning, remove the shaft of the pipettor according to the manufacturer's instructions. Remove seals and gaskets from the shaft. Spray or apply Solution 1, followed by Solution 2. Rinse several times with distilled water, wipe dry, and reassemble.

Demonstrate DNA removal with DNA*Zap*™ Solutions

This experiment demonstrates the effectiveness of DNA*Zap*™ Solutions at removing DNA from microcentrifuge tubes.

1. Place 0.5 µg DNA in each of two microcentrifuge tubes.
2. To one tube, add 10 µL of Solution 1 and then 10 µL of Solution 2. To the other tube add 20 µL of distilled water.
3. Briefly vortex and microcentrifuge both tubes, and let sit at room temperature for 5 minutes.
4. Electrophorese both samples on a 1% agarose gel stained with ethidium bromide and view with UV light.

The DNA treated with DNA*Zap*™ Solutions will be completely degraded (there will be no ethidium-stained material).

Quality control

DNA*Zap*™ Solutions are functionally tested as follows: 0.5 µg plasmid DNA is dried into a standard PCR tube. The tube is then treated with DNA*Zap*™ Solutions following the instructions in this insert. After rinsing, reagents for amplification of an ~300 bp target from the plasmid DNA are added to the tube and it is thermal cycled. A sample of the PCR is then evaluated to verify that no amplification products were synthesized.

Limited product warranty

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