Environmental Monitoring and Cleaning[1,2]

Environmental Monitoring

You should perform environmental monitoring each month with swab test samples collected from pre-PCR area surfaces such as centrifuges, pipettes, PCR racks, cold blocks, benchtops, and fridge and freezer doors. If environmental contamination is suspected, you should increase monitoring frequency.

Note: *Do not swab in the post-PCR area. To reduce contamination and align with good molecular lab practices, do not bring samples from the post-PCR area into the pre-PCR area.*

The recommended procedure for performing environmental monitoring swab tests is as follows:

1. Moisten a sterile swab applicator in a 1.5 mL microcentrifuge tube containing 250 µL nuclease-free water (one swab per surface area).
2. Wipe a test surface with the moistened swab back and forth a few times, rotating the swab as the sample is collected.
3. Put the swab back into the same microcentrifuge tube and agitate it in the water to release collected material.
4. Press the swab against the side of the tube while removing it to release excess water.
5. Discard the used swab.
6. Run the assay using an aliquot of the remaining eluant as if it is a purified sample.

Cleaning

Laboratory cleaning should occur regularly. Additional cleaning may be necessary if swab test results indicate contamination. The most effective cleaning agent is a 10–15% bleach solution. Depending on the item, the recommended cleaning procedures are as follows:

For non-washable and non-removable items (i.e., pipettes and fridge/freezer doors):

1. Wipe the applicable surface with a 10%–15% bleach-dampened cleaning cloth.
2. Leave bleach on the surface for about 15 minutes.
3. Wipe the surface with a separate water-dampened cleaning cloth to remove bleach.
4. Wipe delicate items (such as pipettes) with 70% alcohol (if appropriate) for fast drying and leave others to air-dry.

For washable and removable items (i.e., PCR racks and centrifuge adaptors, not including pipettes):

1. Soak the applicable items in a 10–15% bleach solution for about 15 minutes.
2. Rinse treated items under running tap water to remove bleach.
3. Drain them on paper towels and leave to air dry, or wipe with 70% alcohol for fast drying if necessary.

Note: *Alcohol drying is not required.*

REFERENCES

1. Aslanzadeh J. Preventing PCR amplification carryover contamination in a clinical laboratory. Ann Clin Lab Sci. 2004;34(4):389–96.

2. Nolan T, Huggett J, Sanchez E. Good practice guide for the application of quantitative PCR (qPCR). First Edition 2013. LGC (Internet). Cited 2021 May. Available from: http://www.gene-quantification.de/national-measurement-system-qpcr-guide.pdf.

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