Bioteke Corporation

Nucleic acid aerosol pollution removal instrument

Clear aerosol DNA / RNA

Product Model：NC1001 / NC1002
Capacity：NC1001 2.5L
NC1002 5L

Function：

The air purification sterilizer (nucleic acid aerosol pollution removal instrument) is specially used to remove aerosol DNA / RNA in the laboratory air, and can also sterilize the space area where the microbial limit is required, which can directly kill bacteria, fungi, viruses, etc. Species of microorganisms.

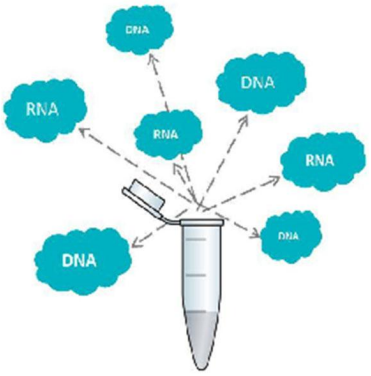
Applicable places:

It is suitable for space nucleic acid aerosol pollution in general molecular biology laboratories, and places requiring regular space disinfection and sterilization such as biosafety laboratories, GMP workshops, infectious wards, schools, hospitals, food companies, and scientific research institutes.

◎ Impact of nucleic acid aerosol contamination:

As a scientific research and clinical testing site, use PCR is used more frequently in molecular laboratories, and samples and amplification targets often have the same situation in multiple batches. Nucleic acid aerosol contamination continues to accumulate in the experimental area, causing the increase of the risk of contamination and false positive frequency.

Contamination of nucleic acid aerosols resulting from the high amplification efficiency of PCR technology can cause false positives in the test results.A false positive means that the experiment is not credible and directly causes economic losses of the laboratory.Cause the pollution of the entire PCR laboratory, and even close the laboratory.



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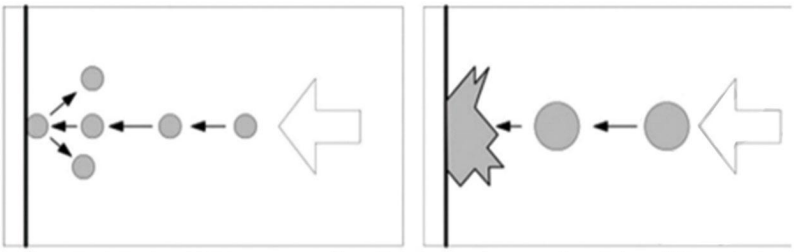
◎ **Principle of action:**

The removal and disinfection process is completed by diffusing nano-micron droplets on the areas requiring nucleic acid aerosol removal and disinfection. When the average diameter of the droplet is less than 10 microns, the nano-micron droplets ejected can be said to be "dry"; small droplets will bounce off the wall and will not break and adhere to make the surface wet. All the characteristics are to meet the demand of difusing disinfectants effectively into special areas where are usually difficult to reach in the form of nano-micron liquid beads.

◎ **Characteristics of Nano-micron liquid beads have the following properties:**

1. Nano-micron liquid beads are in irregular motion and suspended for a long time(Brown motion principle);
2. Nano-micron liquid beads will not aggregate together to produce larger droplets;
3. Nano-micron liquid beads will rebound after contacting with object surface, and will not break to make the surface wet.

Therefore, these properties of nano-micron liquid beads make it easier to reach places that are difficult to disinfect with traditional disinfection methods.



Small globules will bounce off walls and not break up

Large droplets will break up and dampen the surface.

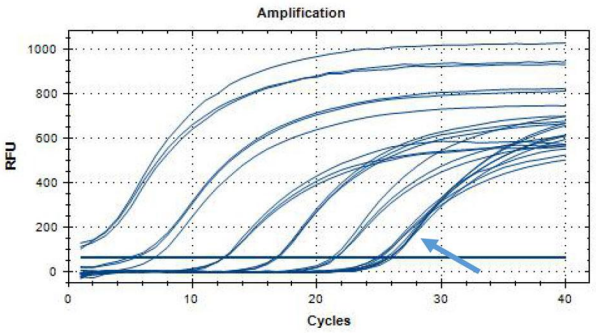
Advantages:

1. Removal of aerosol DNA / RNA in the air, the removal efficiency reaches more than 99%.
2. No need for air compressor to avoid huge noise.
3. The product adopts a specially designed industrial-grade dispersion system, the diameter of nano-micron liquid beads is ≤5μm.
4. Equipped with HEPA high-efficiency filter to remove residual viruses, bacteria, DNA, RNA and residual reagents effectively in the air.
5. Pollution removal range: bacteria, viruses and other microorganisms, aerosol DNA / RNA, formaldehyde, benzene, hydrogen sulfide and other harmful gases.
6. Space disinfection purpose, low concentration of hydrogen peroxide (≤8%) can achieve 99.9% killing effect of bacteria.
7. The reagent usage is small, only 6-10mL / m^3, the material compatibility is good, no residue, no corrosion.
8. Four air outlets, disinfection without blind angle.
9. The production enterprise has the ISO13485 quality management system certificate.
10. The production enterprise passed the German TUV Rheinland certification.
11. The product has the functions of delayed start, wireless remote control, data recording etc.
12. Turbo-driven nano-micron liquid beads, up to 25m^3 / min.

Experimental Data

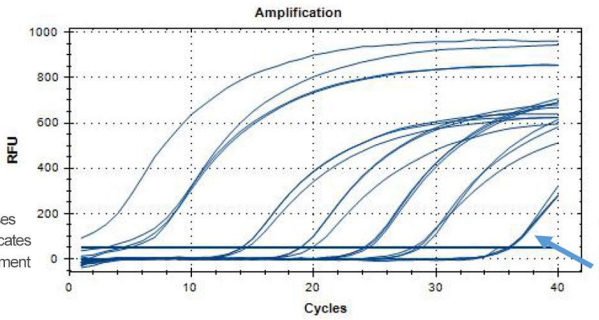
Case 1.

African swan fever control group



The negative control rises up too early, which indicates that the gradient experiment is contaminated.

African swan fever experimental group

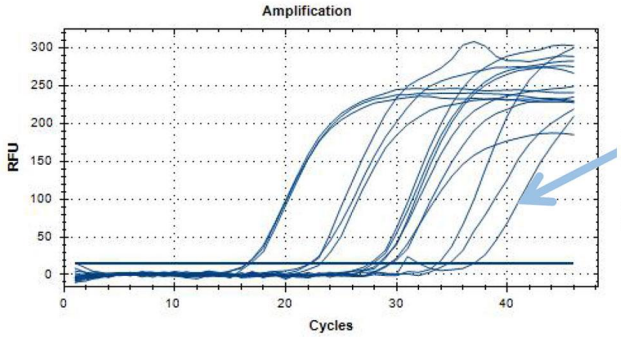


CT value of negative control>35, the gradient experiment is normal

Conclusion: The results of the control group showed that the laboratory had African swine fever plasmid aerosol contamination, and the negative control Ct value was around 26. After the aerosol contamination is cleared, the CT value of the negative control is> 35, which meets the negative judgment standard (Ct value> 35) of the detection kit . The aerosol clearance rate is above 99.9% by calculating Ct value.

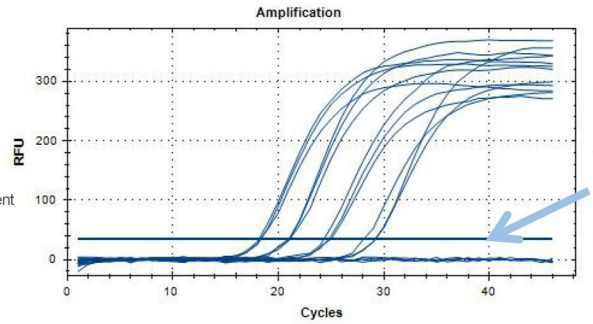
Case 2.

psittacosis control group



The negative control rises up too early, which indicates that the gradient experiment is contaminated.

psittacosis experimental group



The negative control does not rise, which indicates that the gradient experiment is normal

Conclusion: The results of the control group showed that the laboratory had parrot fever plasmid aerosol contamination, and the negative control Ct value was around 35. After the aerosol contamination is cleared, the CT value of the negative control is> 35, which meets the negative judgment standard (Ct value> 35) of the detection kit . The aerosol clearance rate is above 99.9% by calculating Ct value.

Case 3.

Laboratory plasmid mimics nucleic acid aerosol contamination.