

PCR-Based Method for Detecting Viral Penetration of Medical Exam Gloves

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Abstract The test approved by the U.S. Food and Drug Administration for assessment of the barrier quality of medical exam gloves includes visual inspection and a water leak test.

Neither method tests directly the ability of gloves to prevent penetration by microorganisms. Methods that use microorganisms (viruses and bacteria) to test gloves have been developed but require classical culturing of the organism to detect it.

We have developed a PCR assay for bacteriophage (phiX174) that allows the rapid detection

of penetration of gloves by this virus. The method is suitable for use with both latex and synthetic gloves. The presence of glove powder on either latex or synthetic gloves had no effect on the ability of the PCR assay to detect bacteriophage DNA. The assay is rapid, sensitive, and inexpensive; requires only small sample volumes; and can be automated.

SOURCE: US National Library of Medicine (NLM) and PubMed

Notes: This paper also demonstrated that the resistance of punctured latex gloves to viral penetration is 10-17 times higher than both punctured vinyl and nitrile gloves.