

Decontamination of BSL3 confocal microscope systems

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Abstract

The study of human pathogens often involves the imaging of highly infectious materials. The most biologically relevant data is collected from the observation of live samples which can be either whole animal, cell cultures, or tissues from animals or patients. Work with these samples is done in a BSL3 lab which provides protection for both the lab staff and the environment. Annual decontamination of the lab is required for maintenance of the lab infrastructure as well as upgrades of the instruments. In the past the lab was decontaminated with a solution of 10% bleach on lab surfaces and 70% ethanol on the instruments. Uniformity of decontamination cannot be guaranteed. Recently we tested the use of Vaporized Hydrogen Peroxide (VHP) as a sterilant for the lab and all the instruments contained within. Complete decontamination can be verified by monitoring the exposure of test samples. Images were collected on a Leica Stellaris 8 DIVE prior to and after decontamination with VHP. The electronics and mechanical systems of the instrument did not show any damage caused by the decontamination procedure. Images were of identical brightness and resolution before and after sterilization. Optical surfaces did not require any cleaning after completing the process. It is therefore suggested that VHP be considered a standard method for decontaminating microscopy systems located in BSL3 laboratories.