

Preservation of Goat Kidneys Using Low Concentration Formalin for Human Anatomy Learning

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Abstract	<p>Background: Exposure to formaldehyde from a preserved cadaver can cause several health problems in students, lecturers, and laboratory technicians working in medical anatomy laboratories. These conditions include respiratory tract irritation and cancer due to acute and chronic exposure, respectively. Lowering the frequency of contact with formaldehyde from preserved organs helps to ensure the safety of students, lecturers, and laboratory technicians. Therefore, this study aims to determine the effectiveness of low concentration formalin as a preservative solution for goat kidneys. The organ was selected due to its anatomical structure similarity to humans. Method: Goat kidneys with 50-60 ml of volume were collected, washed, immersed in preservative solution, and stored for two months. The samples were then divided into four groups, which were preserved with different formalin concentrations, namely 30%, 20%, 10%, and 5%. The preservation parameters, namely organ structure and integrity, color, springiness, odor, and mold growth were qualitatively described, while the kidney volume was quantitatively measured. Results: After the samples were preserved for two months, they were observed, and all groups showed similar characteristics. The kidneys preserved with 5% or 10% formalin showed equal volume before and after two months of preservation. Conclusion: Low concentration formalin has the same effectiveness in preserving goat kidneys as the high concentration. It also has the potential to be applied in human anatomy learning.</p>
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Author	Dr Dr FITRANTO ARJADI, S.Ked, M.Kes