

# Examination of the Mouse Embryo by Micro-CT

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### Abstract :

Micro X-ray computed tomography (micro-CT) is widely used in preclinical studies of small animals. However, due to the low soft tissue contrast, segmentation of soft tissues in the micro-CT image is a challenging problem. To gain a better understanding of the macroscopic anatomy of the mouse embryo, 3 fixation methods and 3 metal stainings were examined for micro-CT using C57BL/6J mouse embryos in the present study. The examination demonstrated that 1% acetic acid/95% ethanol fixative together with zinc staining provided a high contrast micro-CT image, enabling the segmentation of soft tissues. Then, using this condition, the macroscopic embryo structure of the nude mouse was examined, revealing lack of a thymus. It appears that micro-CT with the fixation and staining condition devised in the present study could be a powerful tool in detecting the effects of various mutations at embryonic stages.

### Key Word :

embryo, nude mice, X-ray computed tomography

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