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Tropical Medicine and Health

Vol. 35 (2007) , No. 4 p.307

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Significance of Molecular Diagnosis using Histopathological Specimens in Cestode Zoonoses

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(Accepted December 7, 2007)

Abstract: Cestode zoonosis cases confirmed by PCR-based mitochondrial DNA analysis were investigated. The cestodiosis included taeniasis, cysticercosis, cystic echinococcosis, sparganosis mansoni, diphyllbothriasis and paragonimiasis. Genomic DNA samples were extracted from the ethanol-fixed, formalin-fixed, paraffin-embedded, and the PAS- or acetocarmine-stained samples submitted for histopathological examination.

For PCR-based analysis, cytochrome *c* oxidase subunit 1 and/or cytochrome *b* were amplified by multiplex PCR or conventional PCR coupled with DNA extraction. In formalin-fixed samples, DNA molecules were degraded in most formalin-fixed samples, but were successfully amplified and the species causing cestodiosis could be identified by sequence analysis of the amplicons. This review describes cestode zoonoses and mitochondrial DNA analysis was useful not only for routine and retrospective diagnosis but also for genetic polymorphism analysis and molecular identification of cestodes with pathogenicity. The significance of molecular diagnosis using histopathology for cestode zoonoses is also discussed.

Key words: [Cestode zoonoses](#), [mitochondrial DNA analysis](#), [histopathology](#)

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To cite this article:

Hiroshi Yamasaki, Kazuhiro Nakaya, Minoru Nakao, Yasuhito Saegusa
“Significance of Molecular Diagnosis using Histopathological Specimens for Cestode Zoonoses”. *Tropical Medicine and Health*, Vol. **35**, pp.307-321 (2006)
