

Original Paper

Molecular determination of *Echinococcus granulosus* isolated from hydatid cyst using mitochondrial atp6 gene

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Abstract

Background and Objective: Several strains of the *Echinococcus granulosus* have been described based on morphological characters, intermediate host specificity and/or genetic analysis of mitochondrial and nuclear DNA. The aim of this study was to characterize different *E. granulosus* isolates by using sequences of mitochondrial atp6 gene.

Materials and Methods: In this study, Sixty infected liver and lungs of cattle, sheep and goats were collected from the abattoir of Varamin city-Iran during 2008. Protoscoleces were removed from each fertile cyst and DNA extracted. New and specific primers were designed for two existing genotypes (G1 and G6) of *E. granulosus* known to occur in Iran and applied in PCR reactions.

Results: The new primers selectively amplified the G1 and G6 genotypes of *E. granulosus* with specific bands of 708 and 705 bp respectively. The G1 genotype was identified in all fertile cyst samples.

Conclusion: This study showed that the new primer pairs which specifically amplify portions of the mitochondrial atp6 gene of the G1 and G6 strains of *Echinococcus granulosus* are proper molecular marker for investigating genetic variation in a number of isolates of *E. granulosus* from a range of hosts (sheep, goats, cattle) in Iran. The result of sequenced samples showed that our sequences were the same as those reported previously for these strains.

Keywords: *Echinococcus granulosus*, atp6 gene, G1 genotypes, G6 genotypes

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Received 6 January 2010 Revised 12 December 2010 Accepted 2 January 2011

This paper should be cited as: Rostami Nejad M, Nazemalhosseini Mojarad E, Taghipour N, Nochi Z, Cheraghipour K, Dabiri H, Mohebbi SR, Noorinayer B, Zali MR. [Molecular determination of *Echinococcus granulosus* isolated from hydatid cyst using mitochondrial atp6 gene]. J Gorgan Uni Med Sci. Summer 2010;13(2):61-67. [Article in Persian]