

Molecular Characterization of Echinococcus granulosus through Amplification of 12S rRNA Gene and Cox1 Gene Fragments from Cattle in Chittagong, Bangladesh

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Abstract : The dog tapeworms *Echinococcus granulosus* develop hydatid cysts in various organs in human and domestic animals worldwide including Bangladesh. The aim of this study was to identify and characterize the genotype of *E. granulosus* isolated from cattle using 12S rRNA and Cytochrome oxidase 1 (COX 1) genes. A total of 43 hydatid cyst samples were collected from 390 examined cattle samples derived from slaughterhouses. Among them, three cysts were fertile. Genomic DNA was extracted from germinal membrane and/or protoscoleces followed by PCR amplification of mitochondrial 12S rRNA and Cytochrome oxidase 1 gene fragments. The sequence data revealed existence of G1 (64.28%) and possible G3 (21.43%) genotypes for the first time in Bangladesh. The study indicates that common sheep strain G1 is the dominant subtype of *E. granulosus* in Chittagong region of Bangladesh. This will increase our understanding of the epidemiology of hydatidosis in the southern part of the country and will be useful to plan suitable control measures in the long run.

Keywords : Echinococcus granulosus, Cox1, 12S rRNA, molecular characterization, Bangladesh

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