



Ministry of Higher Education  
And Scientific Research  
UNIVERSITY of BASRAH  
College of Veterinary Medicine

# Morphological and Molecular Study of *Fasciola gigantica* In Buffaloes and Cows

A Thesis  
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## Summary

A total of (1389) samples were examined which divided into (845) Buffaloes and (544) Cows from Basrah slaughter house at the period between September 2014 to March 2015. The number of infected animals divided into (86) Buffaloes and (9) Cows, while, the total account of isolated worms (5265) from liver and gallbladder of both Buffaloes and Cows. The percentage of infection found to (6.39 , 19.12%) in Buffalo for both males and females respectively, while, in cows (0.82 , 3.33%) for males and females respectively.

The first part was macroscopic and microscopic examination of *Fasciola gigantica* isolated from the livers of Buffaloes and Cows.

The second part of this study was conducted on scanning and transmission electron microscope for liver flukes *F. gigantica*, and the results found a spiny tegument with oral sucker smallest than ventral sucker which was big and muscularis and the genital pore between both suckers. By the other hand the transmission electron microscope showed a high amount on mitochondria, golgi bodies in the tegument of the flukes *Fasciola gigantica*.

The third part of this study was a histological section of the flukes *Fasciola gigantica* and found that a clear anterior or oral sucker, an sensory part or cephaloganglia, and large opening ventral sucker associated with papillary project and pink granulose or pigment in the lumen and epithelial lining with digestive lumen in the center and vitelline glands with clear testes with a membranous structure of the worm appears like antispace like adipose tissue. Different shapes of channels like vitelline glands. Spine like projects at the external surface of parasite found.

The differential diagnosis between *Fasciola hepatica* and *Fasciola gigantica* is very important, by using PCR assay which based on a 618-bp-long sequence of the 28S rRNA gene. But to distinguish between both *Fasciola* sp. using the restriction enzyme which was *Ava* II. From 70% ethanol stored flukes, the total genomic DNA has been extracted by extracting kit with some modification. The results indicate that all the samples can be identified as *Fasciola* sp. *Ava* II which is the common restriction enzymes is described to distinguish between both *Fasciola* sp. and the results indicate that all the samples are identified as *Fasciola gigantica*.