Accepted Manuscript

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PII: S0022-2011(17)30302-6

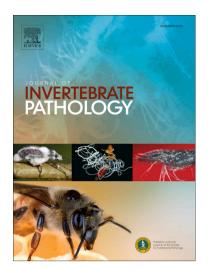
DOI: https://doi.org/10.1016/j.jip.2017.12.005

Reference: YJIPA 7034

To appear in: Journal of Invertebrate Pathology

Received Date: 13 July 2017

Revised Date: 12 December 2017 Accepted Date: 15 December 2017



Please cite this article as: Meng, X-Z., Luo, B., Tang, X-Y., He, Q., Xiong, T-R., Fang, Z-Y., Pan, G., Li, T., Zhou, Z-Y., Pathological analysis of silkworm infected by two microsporidia *Nosema bombycis* CQ1 and *Vairimorpha necatrix* BM, *Journal of Invertebrate Pathology* (2017), doi: https://doi.org/10.1016/j.jip.2017.12.005

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Pathological analysis of silkworm infected by two microsporidia *Nosema*bombycis CQ1 and *Vairimorpha necatrix* BM

Xian-Zhi Meng^{a,1}, Bo Luo^{a,c,1}, Xiang-You Tang^a, Qiang He^a, Ting-Rong Xiong^a, Zhuo-Ya Fang^a, Guoqing Pan^a, Tian Li^{a,*}, Ze-Yang Zhou^{a,b,*}

^a State Key Laboratory of Silkworm Genome Biology, Southwest University, Chongqing, 400716, P.R. China

^b College of Life Sciences, Chongqing Normal University, Chongqing, 400047, P.R.China

^c College of Basic Medical Sciences, Zunyi Medical University, Zunyi, 563000, P.R.China

* Correspondence authors at: State Key Laboratory of Silkworm Genome Biology, Southwest University, Chongqing, 400716, P.R. China.

E-mail addresses: zyzhou@swu.edu.cn (Ze-Yang Zhou), lit@swu.edu.cn (Tian Li).

¹ These authors contributed equally to this work

Abstract

Microsporidia Nosema bombycis CQ1 can be vertically transmitted in silkworm Bombyx mori but Vairimorpha necatrix BM cannot. Therefore, the pathological differences in silkworm infected with these two microsporidia required clarification. Here, we compared the virulence of N. bombycis CQ1 and V. necatrix BM against silkworm. The pathological characteristics in intestine, testis and ovary were surveyed using paraffin sections, scanning electron microscopy and transmission electron microscopy. Our data firstly showed that the virulence of V. necatrix BM was weaker than that of N. bombycis CQ1. Secondly, the typical symptom of V. necatrix BM infection is making xenomas, which are full of pathogens in different stages, at the posterior of intestine. However, no xenomas were formed surrounding intestines infected with N. bombycis CQ1. Thirdly, N. bombycis CQ1 can cluster spores near the trachea while infecting ovaries. It is worth noting that N. bombycis CQ1 infected epithelial cells and connective tissues of ovaries, while V. necatrix BM did not. Although silkworm ovaries can not be infected by V. necatrix BM in vivo, it can infect embryonic and ovarian cell lines in vitro. This study is the first report about comparing infection features of N. bombycis CQ1 and V. necatrix

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