

论著

叮咬不同免疫力兔后中华硬蜱中肠上皮细胞超微结构的观察

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摘要

目的 探讨叮咬不同免疫力兔后中华硬蜱中肠上皮细胞的病理变化。方法 选用中华硬蜱相对分子质量(Mr)为 10 5 0 0 0 纯化抗原, 按常规方法分别于后足掌、腹股沟以及颈背部多点皮内注射免疫新西兰兔。免疫后每只兔用 3 0 只雌性中华硬蜱成虫叮咬, 于 2 4h、48h、72h、5d 及 8d, 每组各取 3 只吸血中华硬蜱观察其中肠上皮细胞超微结构的变化。结果 中华硬蜱初次叮咬兔后, 消化细胞随叮咬时间延长而增多增大, 微绒毛较密集, 排列整齐, 胞质内细胞器丰富, 各单位膜结构清晰, 并出现顶端小管、小泡、大量脂滴和高铁血红蛋白颗粒; 近基膜的细胞膜内褶形成发达的基底迷路系统。叮咬经 Mr 10 5 0 0 0 纯化抗原免疫接种兔后, 中华硬蜱中肠上皮细胞严重损伤和破坏, 消化细胞数量与体积较初次叮咬组及佐剂对照组间差异具有显著性意义。叮咬后 2 4~ 48h 消化细胞表面微绒毛减少, 变短、排列不整, 细胞粗面内质网扩张, 线粒体嵴减少, 高铁血红蛋白颗粒及脂滴等均较初次叮咬组和佐剂对照组明显减少, 基底迷路系统空泡化, 基膜变性、松散和断裂等。叮咬后 72h~ 8d, 细胞器变性、坏死, 细胞核固缩、碎裂以及细胞溶解、碎裂等。结论 中华硬蜱叮咬 Mr 10 5 0 0 0 的纯化抗原免疫接种新西兰兔, 能使其产生获得性免疫力。

关键词 [中华硬蜱](#) [免疫力](#) [中肠上皮细胞](#) [超微结构](#)

分类号

Ultrastructural Changes in the Midgut Epithelium of *Ixodes sinensis* after Infesting the Rabbits Immunized by Purified Ixodic Protein

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Abstract

Objective To observe the ultrastructural changes in the midgut epithelium of *Ixodes sinensis* after infesting rabbits immunized with {Mr 105 000} purified tick antigen. Methods New Zealand rabbits were inoculated with {Mr 105 000} purified antigen by means of multiple intradermal injection in foot pad, groin and back. Each immunized rabbit was infested by 30 female *Ixodes sinensis*. At 24 hours, 48 hours, 72 hours, 5 days and 8 days after infestation, three *Ixodes sinensis* in each group were observed for ultrastructural changes in the epithelium of their midgut. Results Histological examinations showed that with the time going, digestive cells of the ticks after infesting hosts became more and larger with dense and regularly arranged microvilli, enriched organella, distinct unit-membrane structure, and the appearance of tubuli, small vacuole, numerous lipid droplets and hematin granules. These cells also developed a highly infolded basal lamina, forming a labyrinth system. The digestive cells of immunized group were however greatly damaged, whose number and volume were significantly different from control groups. From 24 to 48 hours after infestation, the midgut epithelium of *Ixodes sinensis* showed pathological changes with the basal lamina becoming thinner, looser and broken; digestive cells damaged and vacuolated; microvilli decreased, shortened and irregularly arranged; the mitochondria swollen and its crests reduced, shortened and even with myeloid changes; the rough endoplasmic reticulum dilated; lipid droplets and hematin granules decreased; phagocytic and pinocytic activity weakened; and basal labyrinth system vacuolated. From 72 hours to 8 days after infestation, cells were severely damaged, organella were denatured and necrotic, nuclei showed pyknosis and cells lysed. Conclusion The rabbits immunized with {Mr 105 000} purified ixodic protein have acquired the adoptive immunity against *Ixodes sinensis*; in the anti-tick immunity described above, the midgut of *Ixodes sinensis* is the major affected site.

Key words [Ixodes sinensis](#) [immunity](#) [midgut epithelium](#) [ultrastructure](#)

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