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Title: Changes of Golgi Bodies during the Development of the Infected Cells in Soybean Root Nodules

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摘要: 为了探讨高尔基体与细菌增殖和周膜扩展的关系, 用电子显微镜研究了大豆根瘤侵染细胞发育中高尔基体的变化。结果表明: 幼龄侵染细胞中有高尔基体, 但在成熟和衰老的侵染细胞中却几乎没有这种结构。高尔基体随幼龄侵染细胞中细菌的增多而增多, 它们主要位于细菌附近。这些高尔基体的生理活性较高, 不断向周围的细胞质分泌含有纤维状物质的小泡, 有的小泡还在向细菌运动。一些小泡位于细菌的周膜上, 其附近细菌的周膜常向外形成隆起, 并有纤维状物质出现在其中。由此说明, 大豆根瘤侵染细胞中的高尔基体参与了细菌的增殖和周膜的扩展。

Abstract: In order to discuss the correlation between Golgi bodies and the increase of bacteria and their peribacteroid membranes, the changes of Golgi bodies were studied by electron microscopy during the development of the infected cells in soybean root nodules. Results showed that the infected cells were divided into young infected cell, mature infected cell and senescent infected cell. They were increased with the bacteria in the young infected cells, but this structure almost disappeared in mature and senescent infected cells. Golgi bodies were mainly located near bacteria and were very active in

biophysiology, they often secreted vesicles with fibrilliform material to surrounding cytoplasm, some vesicles continuously moved to near bacteria, some vesicles even closed to the bacteria or were located on the peribacteroid membranes of bacteria and some peribacteroid membranes of near bacteria formed different bulges out with fibrilliform material. Thus it could be revealed that Golgi bodies participated in the increase of the bacteria and their peribacteroid membranes during the development of the infected cells of soybean root nodules.

参考文献/References:

[1] 韩善华, Yang A F.大豆根瘤的超微结构特征[J].微生物学报, 1987, 27 (3) : 217-222. (Han S H, Yang A F. Ultrastructural features of Chinese soybean root nodules[J]. Acta Microbiologica Sinica, 1987, 27 (3) : 217-222.)

[2] Bergersen F G, Goodchild D J. Aeration pathways in soybean root nodules[J]. Australian Journal of Biological Science, 1973, 26 : 729-740.

[3] Han S H, Zheng G. Formation and features of close Association of mitochondrion-plastid[J]. Chinese Science Bulletin, 1991, 36 (19) : 27-31.

[4] 韩善华, 郑国昌. 巨型线粒体形成机理的探讨[J]. 大豆科学, 1994, 13 (1) : 27-31. (Han S H, Zheng G C. Study on mechanism of formation of the huge mitochondrion[J]. Soybean Science, 1994, 13 (1) : 27-31.)

[5] 韩善华. 内质网在细菌周膜形成中的作用[J]. 植物学报, 1991, 33 (8) : 569-573. (Han S H. Role of endoplasmic reticulum in the formation of peribacteroid membranes[J]. Acta Botanica Sinica, 1991, 33 (8) : 569-573.)

[6] 韩善华, 周向军. 侵染细胞中一种内含物的组化研究[J]. 实验生物学报, 1994, 27 (3) : 251-258. (Han S H, Zhou X J. Histochemical studies on a kind of inclusions in infected cells[J]. Acta Biologiae Experimentalis Sinica, 1994, 27 (3) : 251-258.)

[7] Chrispeels M J. The Golgi apparatus mediates the transport of phytohemagglutinin to the protein bodies in bean cotyledons[J]. Planta, 1983, 158 : 140-151.

[8] 韩善华. 大豆根瘤非侵染细胞的主要功能[J]. 大豆科学, 2006, 25 (3) : 304-308. (Han S H. Main function of uninfected cells in soybean root nodules[J]. Soybean Science, 2006, 25 (3) : 304-308.)

[9] 邹琴, 杨雨晗, 韩善华, 等. 烟草类根瘤中质体蛋白体的超微结构研究[J]. 四川大学学报, 2009, 46 (1) : 250-254. (Zou Q, Yang Y H, Han S H, et al. Study on the ultrastructure of the protein bodies in the tobacco paranodule plastids[J]. Journal of Sichuan University, 2009, 46 (1) : 250-254.)

[10] 韩善华, 张红. 大豆根瘤细菌周膜的冷冻复型研究[J]. 西北植物学报, 1999, 19 (2) : 241-245. (Han S H, Zhang H. Freeze fracture study on peribacteroid membranes in soybean root nodules[J]. Acta Botanica Boreali-occidentalia Sinica, 1999, 19 (2) : 241-245.)

[11] Parsons R, Day D A. Mechanism of soybean nodules adaptation to different oxygen pressures[J]. Plant Cell and Development, 1990, 13:300-312.

[12] Sanjuan J, Olivares J. Implication of nifA in regulation genes located on a Rhizobium meliloti cryptic plasmid that affect nodulation efficiency[J]. Journal of Bacteriology, 1989, 171 : 4154-4161.

[13] Tu J C. Rhizobium root nodules of soybean as revealed by scanning and transmission electron microscopy[J]. Phytopathology, 1976, 65:447-454.

[14] Newcomb W, Creighton S, Latta L. A reinvestigation of the origin of the peribacteroid membrane in root nodules of Vicia faba[J]. Canadian Journal of Botany, 1981, 89 : 1547-1552.

[15] Bergersen F G, Lyttleton P, Bullivant S, et al. Membranes in lupinus root nodules. I. The role of Golgi bodies in biogenesis of infection threads and peribacteroid membranes[J]. Journal of Cell Science, 1978, 30 : 129-149.

[16] Roth L, Stecay G. Bacterium release into host cells of nitrogen-fixing soybean nodules: The symbiosome membrane comes from three sources[J]. European Journal of Cell Biology, 1989, 49 : 13-23.

[17] 韩善华, 张红. 豌豆根瘤侵染细胞中淀粉体的研究[J]. 作物学报, 2003, 29 (3) : 432-435. (Han S H, Zhang H. Study on the amyloplasts during the development in the infected cells of pea root nodules[J]. Acta Agronomica Sinica, 2003, 29 (3) : 432-435.)

相似文献/References:

[1]孙庆元,张雪花,赵略,等.尿素酶抑制剂NBPT对大豆根系的影响[J].大豆科学,2008,27(01):92.[doi:10.11861/j.issn.1000-9841.2008.01.0092]

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