

论文

疫苗口服接种及其微粒传输系统

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摘要:

为说明疫苗口服接种产生黏膜免疫的生理学基础, 突出微粒作为口服疫苗载体的研究意义, 本文分析了肠系淋巴组织的抗原呈递及黏膜免疫反应特点, 并结合肠道吸收屏障, 进一步讨论微粒载体经肠道的摄取和转运, 阐述疫苗微粒口服接种的研究概况。参与免疫调节的M-细胞和派伊尔集合淋巴结是口服疫苗产生免疫应答的重要部位, 采用微粒作为疫苗转载体, 可克服肠道屏障的影响, 赋予了口服疫苗以新的内涵, 特别是凝集素化微粒在提高疫苗转运及免疫接种效率方面的作用。可见经肠黏膜免疫系统进行的疫苗口服接种, 通过微粒载体介导, 将实现定位触发和效应放大, 具有潜在的研究和应用价值。

关键词: 疫苗口服传输 微粒 纳米粒 黏膜免疫 派伊尔集合淋巴结 外源凝集素

Oral vaccination and vaccine-entrapped microparticle delivery system

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Abstract:

In order to elucidate the physiological basis for mucosal immunity of oral vaccination and to present the essential carrier of microparticles or nanoparticles used to investigate the orally delivered vaccine, the features of antigen presentation and mucosal immunereaction in gut-associated lymphoid tissues were analyzed. Considered the morphological and physiological barriers of the gastrointestinal tract, absorption and transport of particulates were further discussed. And the studies about particulate dosage forms for oral vaccine delivery were also summarized in this review. Peyer's patches and M-cells, involved in immunoregulation, are significant areas performing the critical role in oral vaccine. The applied vesicle of microparticles could overcome the barriers of gastrointestinal tract. Oral vaccination was endowed with new connotation, especially the enhanced transport and immunization efficiencies promoted by the lectin anchored particles. In conclusion, oral vaccination mediated by particulate carrier via mucosal immune system, would contribute to the site-specific triggering and signal magnification. For vaccines, the prospects for the application of these promising carrier systems might have potential attraction for scientific research and commercial development.

Keywords: microparticle nanoparticle mucosal immunity Peyer's patch lectin oral vaccine delivery

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