

综述

纳米药物免疫毒性研究进展

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摘要 纳米药物由于粒径小等特性, 极易进入体内, 并透过多种生理屏障与免疫细胞或细胞表面蛋白相互作用, 发生特异性反应, 诱发免疫应答, 增强或降低机体的免疫功能。此外, 免疫系统自身的复杂性和纳米药物类型多样性增加了研究纳米药物免疫毒性的难度。纳米药物对机体可能具有免疫抑制或免疫刺激包括抗原性、佐剂特性和炎症反应等免疫学特性, 不同的纳米药物也已发现可以诱导机体产生不同程度的免疫反应。本文就纳米药物的免疫学特性、免疫系统与纳米药物的相互作用以及不同纳米药物免疫毒性研究方法进行综述。

关键词 [纳米药物](#) [免疫](#) [毒性](#) [安全性评价](#)

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Progress in immunotoxicity of nanodrugs

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Abstract

Special properties, such as size, make nanodrugs different from traditional drugs. They can enter organisms, blood stream, and then interact with immune cells or proteins in cells, resulting in immunotoxicity of lymphocytes and specific reaction and inducing immune system responses or immune function decline. Furthermore, the complexity of the immune system and the diversity of nanodrugs make difficult evaluation of their immunotoxicity. Nanodrugs can affect organisms via immune suppression or immune stimulation, including antigen and adjuvant properties. Different nanoparticle drugs have been found to have varied impact on the body. The interaction of nanodrugs with the immune system, immunologic characters, current research on the immunotoxicity of different nanodrugs and methodology were reviewed.

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