

# Particulate vaccine delivery systems may help protect against infectious disease outbreaks and bioterror threats

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Most traditional vaccines have safety and efficacy issues, whereas particulate vaccine delivery systems—which utilize nano- or micro-particulate carriers to protect and deliver antigens—are efficient, stable, include molecules to bolster immune responses, and minimize adverse reactions due to the use of biocompatible biomaterials. A new review summarizes the current status of research efforts to develop particulate vaccine delivery systems against bioterrorism agents and emerging infectious pathogens.

The available evidence indicates that particulate vaccine delivery systems should be strongly considered for public health preparedness and countermeasures against these threats.

"With the recent outbreaks of Ebola virus and Zika virus, it is widely recognized that we need new strategies to prevent infectious disease outbreaks," said Dr. James Moon, author of the WIREs Nanomedicine and Nanobiotechnology article. "Our review provides a timely overview on the current research efforts and presents future directions on particulate-based vaccine delivery systems that may address many of the technical challenges facing traditional vaccine design and development."

**More information:** Yuchen Fan et al. Particulate delivery systems for vaccination against bioterrorism agents and emerging infectious pathogens, *Wiley Interdisciplinary Reviews: Nanomedicine and*

*Nanobiotechnology* (2016). [DOI: 10.1002/wnan.1403](https://doi.org/10.1002/wnan.1403)

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