



## Intranasal Chitosan-DNA Nanospheres Protect Against Acute RSV Infection

**R**espiratory syncytial virus (RSV) is the most common cause of viral lower respiratory tract infections in infants and children. Acute RSV infection is associated with episodes of bronchiolitis, wheezing and exacerbation of asthma in children. No effective vaccine is currently available for RSV infection.

Researchers at the University of South Florida have developed a unique intranasal gene transfer approach against respiratory syncytial virus (RSV), using chitosan nanospheres.

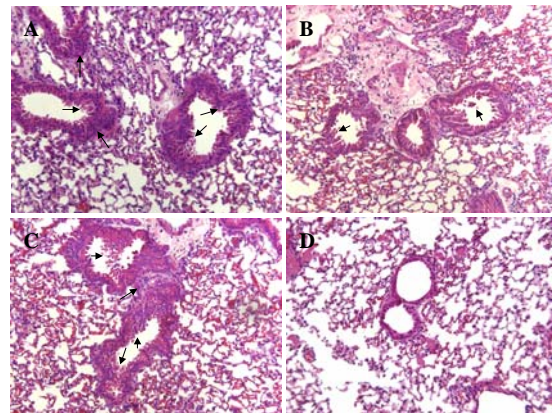
The technology is a safe and effective approach against RSV and can be a valuable treatment for infants 2 to 8 months of age who are the most susceptible to RSV infection.

This technology is an effective prophylactic intranasal gene transfer strategy utilizing chitosan-DNA nanospheres (IGT), containing a cocktail of plasmid DNAs encoding all RSV antigens. In mice, a single administration of IGT significantly reduces RSV titers and attenuates pulmonary inflammation caused by RSV; it induces the production of RSV-specific IgG antibodies, nasal IgA antibodies, cytotoxic T lymphocytes, and IFN-g production in the lung and splenocytes.

### Advantages:

- Safe and effective against RSV.
- Valuable alternative to current, inconvenient, expensive and partially effective therapies.
- Animal data available.

*Unique intranasal gene transfer for RSV treatment*



Histological analyses of the mouse lung after gene transfer. IGT-administered mice (D) show less epithelial damage and cellular infiltration than the chitosan (A), naked DNA (B) and chitosan plus pVAX (mammalian expression vector) (C) control groups.

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