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Nasal protein vaccines for Pneumonia

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Pneumococcal infections account for up to 1.6 million deaths annually, and the most affected population are infants and elderly. Streptococcus pneumonia occurs in more than 100 serotypes, but currently available vaccines (Pneumovax and Prevnar) protects only against few serotypes. Hence, there is an immediate need for vaccine that could protect against all serotypes. PsaA (pneumococcal surface adhesin A) is a 37 KDa adhesin, present in all serotypes with minimal structural variation. Our objective was to administer PsaA encapsulated microparticles intra-nasally to induce mucosal and systemic responses, however, the nasal delivery is limited by the mucociliary clearance. Polycaprolactone microparticles were thus coated with mucoadhesive polymers such as chitosan (C), alginate (A) and gelatin (G) to improve mucoadhesion, and further evaluated as vaccine carriers.

Biography

Ravi Palaniappan obtained his Ph.D. degree from the Dr. MGR Medical University, India. He is a Associate Professor & Director of Vivarium in the College of Pharmacy at Mercer University in Atlanta, Georgia. Dr. Palaniappan has published over 50 manuscripts. He has been the recipient of several research grants from the National Institutes of Health (NIH) and private companies. He serves as a Journal Reviewer for over 10 Scientific Journals and has patents issued in the area of Nanotechnology.

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