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Pneumococcal conjugate vaccine: Use of pneumococcal surface protein A (PspA) as carrier

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Conjugate vaccines are one of the most effective ways to prevent diseases caused by pathogens like *Streptococcus pneumoniae, Hemophilus influenzae* and *Neisseria meningitidis.* The *S. pneumoniae* is a Gram positive bacterium that has been the leading cause of pneumonia and meningitis in children. There are more than 90 serotypes of pneumococcal polysaccharides (PS) and their prevalence varies regionally. The development of alternative methods to obtain conjugate vaccines aiming at improving their availability, as well as increasing the numbers of producers mainly in low income countries, is of great importance. The Centro de Biotecnologia from Instituto Butantan has been synthesizing these conjugates and evaluating their applicability as vaccines. We have been studying the conjugation between *S. pneumoniae* capsular polysaccharide and pneumococcal surface protein A (PspA), an important virulence factor present in all pneumococcal strains, which is immunogenic and protective. The use of protective pneumococcal protein as an active carrier could be a good alternative to expand the vaccinal coverage instead of increasing the number of polysaccharide serotypes. We conjugated capsular polysaccharide serotypes 23F, 6B, 14 and recombinant PspAs from families 1 and 2. All conjugates were able to induce functional antibodies against polysaccharide and proteins. Our results suggest that the use of PspA as carrier would allow that both components of the conjugate vaccine, protein and polysaccharide to act as antigens.

Biography

Giovana Cappio Barazzone has completed her PhD in Organic Chemistry at Universidade de São Paulo in 2007 and Postdoctoral studies at Instituto Butantan. Since 2010, she has been working as Scientific Researcher at Centro de Biotecnologia in Instituto Butantan.

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