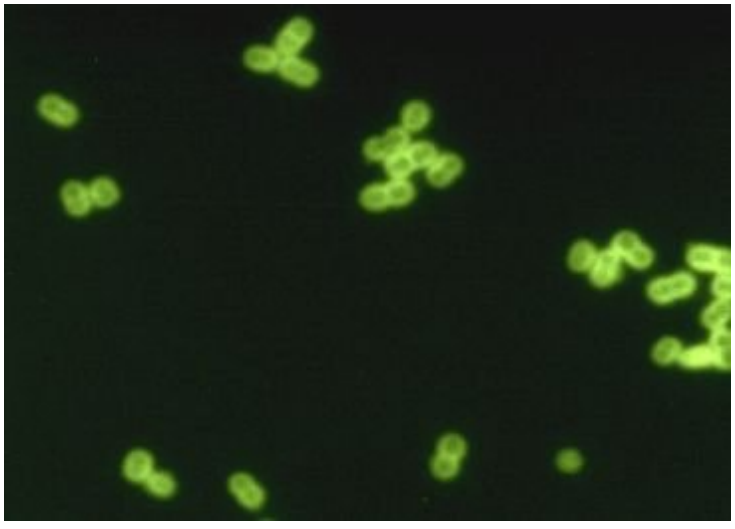
BioSpect
the business of Bi
24 years of leveraging the business of Bio
www.biospectrumindia.co

Effective vaccine for pneumonia from Panacea Biotec

19 February 2013 | Features | By Rahul Koul Koul

Effective vaccine for pneumonia



The bacteria Streptococcus pneumoniae continues to be a major contributor to the mortality rate in developing countries like India. Many previous vaccination studies in the US have shown increased rates of invasive and noninvasive disease caused by serotypes not controlled by the existing vaccine. For these reasons, work on the development of a vaccine containing additional serotypes progressed, and pneumococcal conjugate vaccine 13 (PCV13) was approved on February 24, 2010 by the US Food and Drug Administration (FDA). Hence, there arises a need to monitor the resistance pattern and map the serotype distribution in different geographic locations, which will help determine the effects of the widespread routine immunization and its expanded serotype coverage on pneumococcal disease in children and adults.

Initiating a project on the development of vaccine in this direction, New Delhi-based Panacea Biotec has been quite successful in achieving its purpose to a great level. The project funded by the Biotechnology Industry Partnership Program (BIPP) proposes to develop fermentation strategies for the production of 13 robust polysaccharides from 13 S.pneumoniae serotypes.

The goal included development, purification and working on conjugation strategies for the production of the highly immunogenic conjugated polysaccharides vaccine from all these serotypes of S.pneumoniae.
In addition to that, Panacea will design and develop a formulation for the conjugate pneumococcal vaccine and confirm the immunogenicity.

The R&D team at Panacea Biotec has prepared and characterized research cell banks for all strains. Initially, the company developed a fermentation process at a small scale and later it was scaled up to 15 liters for most of the serotypes. Concurrently, purification process was also established and at present the characterization is in progress for most of serotypes.
The fermentation and purification processes have been established for the carrier protein and the scale up has been initiated. Simultaneously, conjugation and formulation work is in progress for proof-of-concept studies.

Currently, the development of the vaccine is moving in the right direction as planned. The preclinical studies need to be carried out to evaluate the safety and efficacy of the vaccine. The developed process has unique aspects and is being considered for patents. Most of the milestones and proposed targets have been achieved, with some of them being in advanced stages of progress. Even the Biotechnology Industry Research Assistance Council (BIRAC) has rated the self satisfaction level of the project as 10 on the scale of 1-10. With the market potential estimated at Rs 930 crore and only two suppliers present in the Indian market, the demand for vaccine
is huge.

The vaccine has a national and societal relevance as it will address the pathogen, which is estimated to cause 16 million deaths every year, including up to one million children below five years. The incidence is highest in developing countries, making it all more relevant
to India.