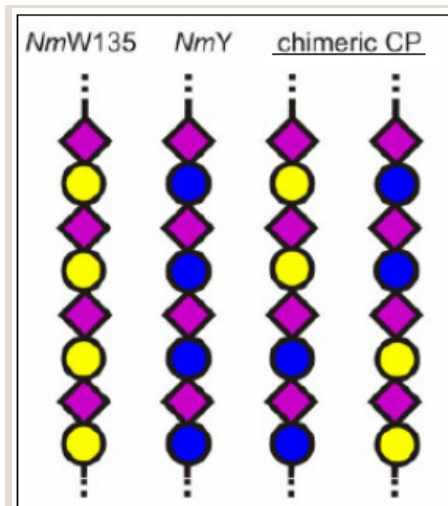


Synthetic Capsular Polysaccharides of *Neisseria meningitidis* for meningitis vaccine

Reference Number: TO 15-00116

Challenge

Bacterial meningitis, a syndrome characterized by inflammation of the meninges, accounts for an estimated annual 170,000 deaths worldwide. Case fatality rates range up to 40%, and survivors suffer from serious sequelae such as limb loss, deafness and disabilities.



Production of chimeric capsular polysaccharides from serogroup W-135 and Y of *Neisseria*.

Neisseria meningitidis is one of the most dangerous agents of meningitis because of its potential to spread in epidemic waves (as seen in the 2002 epidemic in Burkina Faso, West Africa). Crucial virulence determinants of *Neisseria* are their extracellular polysaccharide capsules, which are essential for survival in human serum. Of the many different serogroups of *Neisseria* only six (A, B, C, W.135, Y and X) account for virtually all cases of the disease. Up to date, vaccines are available against A, C, Y and W-135, but not against B and X. Although the capsular polysaccharides of *Neisseria* are excellent candidates for vaccines, large-scale production from bacterial cultures is very costly and bears the risk of contamination with the *Neisseria* toxin.

Technology

The invention provides a novel *in vitro* method for producing the polysaccharides specific for *Neisseria* serogroups W-135, Y, X and A. Furthermore it was shown that chimeric polysaccharides comprising different combinations of serogroup-specific monomers can be synthesized as well. This new method eliminates the risk of toxin contamination during the vaccine production process and also allows to generate multivalent vaccines against more than one serogroup, thus providing a substantial cost advantage to the vaccine production process.

Commercial Opportunity

In-licensing or cooperation for further development of vaccine candidates is possible.

Developmental Status

Small-scale production of serotype-specific and chimeric capsid polysaccharides has been optimized.

Patent Situation

A European patent application has been filed in 2009 (further information available under CDA).

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