Multivalent Meningococcal Conjugates and Methods for Preparing Conjugates

Technology Summary

Among 13 isolated meningococcal serogroups, A, B, C, W-135 and Y are the most prevalent. There are three FDA-approved capsular polysaccharide (PS)-based vaccines, one tetravalent PS vaccine, and two tetravalent conjugate vaccines for protection against meningococcal disease caused by groups A, C, W-135 and Y Neisseria meningitidis. However, there is no (PS)-based vaccine for Group B capsular PS. There is a genuine need to develop novel meningococcal vaccines, particularly for group B and group X meningococcal serogroups.

FDA inventors developed a modified CDAP (1-cyano-4-dimethylaminopyridinium tetrafluoroborate) conjugation method where meningococcal factor H binding protein (fHbp) conjugates with groups A, C, W-135 and PS. The resulting conjugates serve as effective carriers for PS in mice. The induced antisera are bactericidal against both serogroups A, C, W-135 and Y AND serogroup B. Further, the antisera are bactericidal for serogroup X strains that that express fHbp1 on its surface.

Potential Commercial Applications

- Multivalent meningitis vaccine
- Research tool

Competitive Advantages

- Higher vaccine yield
- More efficient conjugation method
- Lower cost vaccines

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Publications:

Pinto VB, Burden R, Wagner A, Moran EE, Lee CH. The development of an experimental multiple serogroups vaccine for Neisseria meningitidis. *PLoS One*. 2013;8(11):e79304. PMID: 24244473

Intellectual Property:

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