FinaBio
Fina Biosolutions LLC

A Conjugate Vaccine R&D Company

Fina Biosolutions provides laboratory services, conjugation technology and consulting in the field of conjugate vaccines and conjugation chemistry. FinaBio was founded in 2006 by Dr. Andrew Lees who developed the conjugation chemistry used by GlaxoSmithKline and the Serum Institute of India in their pneumococcal and meningococcal vaccines. Dr. Lees is the inventor on over 25 patents with 75 peer-reviewed publications. In addition, the company serves as a strategic R&D partner and licenses its technology to companies globally.

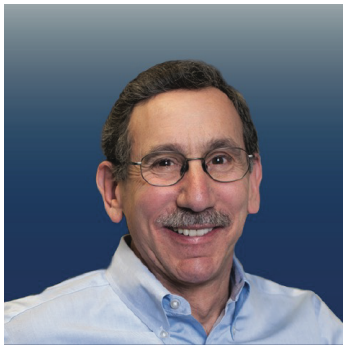
FinaBio provides technology expertise in the following areas:

(1) conjugate synthesis and characterization

(2) protein expression and purification

(1) Conjugation: Conjugate vaccines, in which an antigen is chemically linked to a protein "carrier", are among the most complex and expensive of the childhood vaccines. FinaBio's goal is to help make conjugate vaccines more affordable. FinaBio performs conjugation covering diverse antigens, carrier proteins and chemistry. Antigens have included peptides, oligosaccharides (both synthetic and natural), polysaccharides, chemical haptens, and proteins. Chemistries span reductive amination, CDAP, thiol-ether, click and others. Our facility is well-equipped for conjugate synthesis and characterization. FinaBio provides carrier proteins, including CRM197, for research and clinical use. We also provide pre-labeled, ready to conjugate carrier proteins. In addition to contract conjugation, we develop conjugation protocols, train client scientists, and assist with technology transfer and implementation.

(2) Protein expression and purification: FinaBio has developed an *E. coli* strain (gor-) with an oxidative cytoplasm that can express soluble intracellular proteins with disulfide bonds. The strain grows to high densities and expression levels. Our second-generation strain, "Gor/Met *E. coli*", also cleaves off the N-terminal methionine. We have used it to express cytokines, insulin, single chain antibodies as well as conjugate vaccine carrier proteins (CRM197 and a genetically detoxified tetanus toxin). We manufacture CRM197 for research and clinical use.



Fina Biosolutions' founder, Andrew Lees, is a recognized expert in the field of conjugate vaccine chemistry. He received his Ph.D. in Biophysics from The Johns Hopkins University and a B.S. in chemistry from Harvey Mudd College. He has twice been listed as Medicine Maker Magazine's "100 Most Influential People in Drug Development," received Harvey Mudd College's "Outstanding Alumni Award", the Uniformed Services University's "Meritorious Service Award" and is a Johns Hopkins Distinguished Alumnus. In addition to his role as Scientific Director of Fina Biosolutions, Dr. Lees is also an adjunct Professor at the University of Maryland School of Medicine's Center for Vaccine Development, the Uniformed Services University and the University of Ohio (Toledo).