Lipid-Calcium-Phosphate (LCP) Nanoparticles for Drug and Gene Delivery

Small nanoparticles (30-50 nm) containing an amorphous precipitate of calcium phosphate with a wrapping lipid bilayer have been developed to deliver impermeable drugs and genes to intracellular targets. Plasmid DNA, siRNA, peptide antigen and small chemo drugs have been delivered with LCP to tumor and liver. Dr. Leaf Huang will discuss both mechanism and application of the nanoparticles.

ABOUT THE SPEAKER

Leaf Huang, Ph.D. is the Fred Eshelman Distinguished Professor, Division of Molecular Pharmaceutics in the Eshelman School of Pharmacy, University of North Carolina at Chapel Hill. Dr. Huang's entire scientific career has been devoted to researching gene therapy and targeted drug delivery. He pioneered the liposome nonviral vector and has designed and manufactured the cationic lipid vector for the first nonviral clinical trial in 1992. His current work centers on nanoparticle vectors for gene transfer in tumor and liver. He also conducts research in establishing a ligand-targeted delivery system for cDNA, mRNA, siRNA, proteins and peptides for tumor growth inhibition and for vaccines to be used in treating cancer and infected diseases. He has authored or co-authored more than 330 peer-reviewed papers and more than 140 reviews and book chapters with an H-index of 95. He is also the inventor or co-inventor of 17 US and foreign patents. In 2004, he received the Alec D. Bangham MD FRS Achievement Award, which is the highest honor in liposome research. Dr. Huang was the recipient of the 2013 Distinguished Pharmaceutical Scientist Award, the highest scientific recognition of the American Association of Pharmaceutical Scientists. Dr. Huang has also cofounded five biotech start-ups.

FRIDAY, MARCH 21, 2014
2:00 - 3:30 pm, Seminar Room, Virginia Bioinformatics Institute