

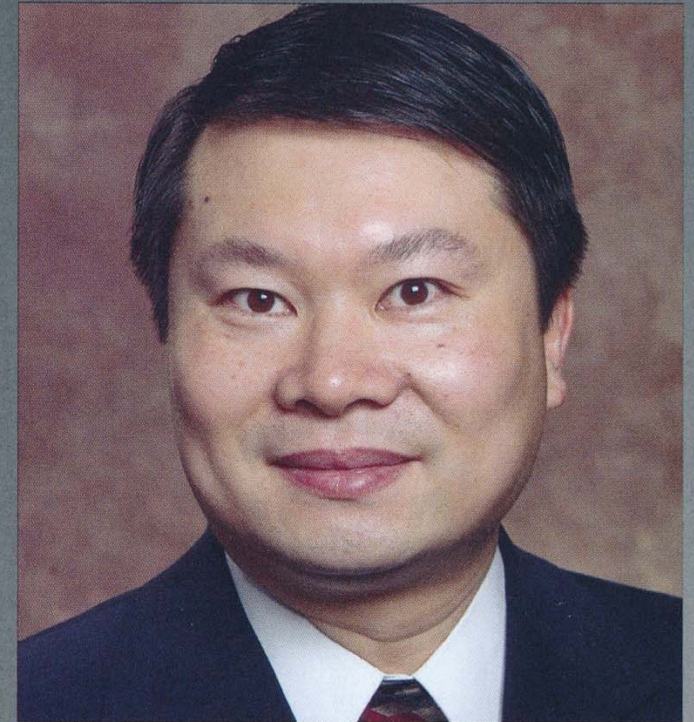
HDL Subparticles Offer New Targets for Drug Development

High density lipoproteins (HDL) have long been recognized as the “good” cholesterol that helps protect against cardiovascular disease. But genomic studies have revealed that HDL has a much more complex composition and function than previously understood.

Researchers from Cincinnati Children’s and the University of Cincinnati report discovering 38 new HDL subparticles in an effort they hope will allow more precisely targeted treatments for cardiovascular disease. Led by Long (Jason) Lu, PhD, Division of Bioinformatics at Cincinnati Children’s, the scientists published their findings in the August 2015 *Journal of Proteome Research*.

In what they termed the “first report that employs a network-based approach to systematically infer HDL subspecies,” the scientists used genomic and computational analyses to identify the subparticles, backed by human plasma studies and gene knockout experiments in mice.

The study contributes significantly to a growing understanding that HDL serves as much more than a mechanism for whisking lipids from the body. Their findings, the authors state, “leave little doubt that HDL is not only



Long (Jason) Lu, PhD.

involved in lipid transport, but also proteinase inhibition, anti-inflammation, complement regulation, and innate immunity.”

Future work will aim to further isolate and characterize the subparticles biochemically as a step toward developing targeted tests and treatments that combat cardiovascular disease.