

Approach for development of ω -3 phospholipid dietary supplement to potential lipid drug

Su Chen

Chainon Neurotrophin Biotechnology Inc., USA

ω -3 polyunsaturated fatty acids such as docosahexaenoic acid (DHA; 22:6 ω -3) are important in the prevention and treatment of neurodegenerative disorders, eyesight, autism and other human diseases. Although the fatty acids are essential for life, their bioavailability is low when delivered by oral route using traditional triglyceride forms (fish oil) of administration, especially for promoting brain functions. The greater bioavailability of DHA measured after phospholipid liposome ingestion, compared with triglycerides ingestion, is supported by a number of animal and clinical studies, and the development of DHA phospholipids based dietary supplements to become potential therapeutic reagents is of vital importance in clinical medicine. This oral presentation introduces approaches for the development of DHA phospholipids based dietary supplements to potential drugs, including (1) lipidomics of DHA phospholipid resources; (2) understanding of the function and structure of DHA phospholipids of interest at the molecular species level; (3) designation of potential new DHA drugs based on metabolic pathways of the DHA phospholipid species and their preparation in a small scale; (4) investigation on both in vitro and in vivo metabolic studies of various potential DHA phospholipid drugs; (5) further development of semi-synthetic methods for the DHA lipid drug manufacturing; and (6) dosage formulation and further clinical trials of the DHA drugs.

Biography

Su Chen (Chief Executive Officer at the Chainon Neurotrophin Biotechnology Inc, Texas USA) got his Ph.D. in Mario Negri Institute for Pharmacological Research in Milan of Italy, and was a post doctoral research fellow in Italian National Research Council at Padova. After his research position as Senior Research Fellow at Department of Chemistry of the University of Warwick in UK, he joined in Department of Pharmacology at Rush University School of Medicine as assistant professor, and then Quest Diagnostic Nichols Institute as departmental associate scientific director in the US. He has contributed significantly in areas of chemistry, biochemistry and pharmacology of marine phospholipids, particular in development of docosahexaenoic acid (DHA) - containing phospholipids for treatment of neurodegenerative disorders and infertility. He already published more than 44 articles and 3 book chapters in the field of lipids. He is now the Secretary-General of the International Society of Dietary Supplement and Phytotherapy from 2011 – 2014.

su@chainonbio.com