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TITLE

Targeted Nanodisks: Design, Construction and Biological Activity

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Nanodisks (ND) are nanometer scale complexes of phospholipid and apolipoprotein that have been shown to function as drug delivery vehicles. ND harboring significant quantities of the bioactive isoprenoid, all trans retinoic acid (ATRA), have been generated and characterized. In the present study a single chain variable antibody (scFv)•apolipoprotein A-I chimera was constructed. The scFv component was directed against the B lymphocyte surface antigen, CD20. Characterization studies showed the fusion protein retains the ability to form ND while the scFv component recognizes the CD20 antigen on the surface of lymphocytes. Studies conducted in a cultured cell model of Mantle Cell Lymphoma revealed that α -CD20 scFv•apolipoprotein A-I ATRA-ND displays enhanced apoptosis induction compared to non targeted, apolipoprotein A-I ATRA-ND. Thus, engineered ND can be used for targeted drug payload delivery to specific tissues.

Biography

Dr. Ryan is Senior Scientist at Children's Hospital Oakland Research Institute and Chair of the Center for Prevention of Obesity, Cardiovascular Disease and Diabetes. In 2004, Dr. Ryan was appointed Adjunct Professor in the Department of Nutritional Sciences and Toxicology at UC Berkeley and, currently, he is Visiting Professor in the Department of Developmental Biology at Stanford University. Dr. Ryan is a Founder and Chief Scientific Officer of Lypro Biosciences Inc. He has authored over 100 research publications in a career spanning 25 years.