OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Nutritional Science & Therapy

July 15-17, 2013 Courtyard by Marriott Philadelphia Downtown, Philadelphia, USA

Targeting Calcitriol, the active form of VitaminD3, to inflammatory breast cancer tumors

Anja Nohe
University of Delaware, USA

Abstract

Many epidemiological studies link low levels of VitaminD to increased cancer risk. Current clinical trials however failed to show the effectiveness of VitaminD3 in cancer therapy. This may be due to the concentration needed at the tumor site. Therefore we developed calcitriol conjugated Quantum dots to specifically target calcitriol to the tumor site. We chose inflammatory breast cancer (IBC) as a model system. The overall survival rate for IBC patients is 40% for 5 years and 20% for 10 years compared to 87% for all breast cancers. IBC is therefore the most deadly breast cancer. Previous studies showed that high doses of calcitriol inhibit migration, invasion and emboli formation of IBC cells. Using our conjugated Quntum dots we systemically injected mice with IBC tumors. Our data clearly show that the Quantum dots delivered the calcitriol to the tumor and may be used for IBC treatment. However, more research is necessary to determine the concentration needed to eradicate the IBC tumors.

Biography

Anja Nohe an assistant professor at the University of Delaware and the director of the laboratory for Cellular Signaling and Dynamics. She received her PhD in Physiological Chemistry in Germany. After her postdoctoral fellowship at the University of Western Ontario, she became a faculty member in Chemical and Biological Engineering at the University of Maine until she relocated to the Department of Biological Sciences at the University of Delaware. Dr Nohe has over 30 publications focusing on skeletal development and nanomedicine. Her lab is interested i identifying new targets and therapies for the treatment of osteoporosis, osteoarthritis and breast cancer.