

2nd International Summit on **Integrative Biology**

August 04-05, 2014 Hilton-Chicago/Northbrook, Chicago, USA

Design, synthesis and biological studies of lymph targeted agents

Tao Jiang, Nan Zhang, Feng Liu and Lijuan zhang
Ocean University of China, China

As an important part of the immune system, the lymphatic system is closely related to a range of human diseases, such as tumor metastasis, inflammation, diabetes and obesity. Especially in breast cancer, melanoma and head and neck cancer tumor metastasis, lymphatic system transports liquid and tumor cells from disease primary lesions into the circulation, leading to systemic spread of cancer cells. Because of the poor lymphatic system aggregation of traditional micromolecule contrast agent and chemotherapeutic drugs with intravenous administration, using macromolecular polymer as a carrier to connect the contrast agent or small molecule anticancer drugs which through lymphatic drainage into the lymphatic system after subcutaneous injection has been an important method for lymph targeted imaging and treatment. Non-invasive magnetic resonance (MR) imaging with a high sensitivity and resolution, effectively avoiding radiation or toxic risks of the traditional imaging methods, has been the development trend of lymphography. Based on mannose binding protein (MBP) receptor-binding strategy, we synthesized three lymph MR contrast agents, HD113, HD116 and HD117 with low molecular weight marine polysaccharides as the carrier and their structural characterization were carried out. In rabbit lymph MR imaging experiments, compared with the control Dextran-GdDTPA, both HD116 and HD117 with a lower molecular weight notably improved lymph nodes signal enhancement ratio and continuing time. The different levels of MBP recognition and binding activities in lymph tissue may be the cause of significantly different lymph aggregation between these two compounds with Dextran-GdDTPA.

Biography

Tao Jiang is a Professor in Medicinal Chemistry with the Marine Drug and Food Institute of Ocean University of China. Her research interests focus on the chemical modification of bioactive compounds by saccharide and total synthesis of marine alkaloid. She has published about 60 refereed research papers and led several research projects from Chinese government.

jiangtao@ouc.edu.cn