

Evans blue based Theranostics

Xiaoyuan (Shawn) Chen^{1*}

¹National University of Singapore

*chen.shawn@nus.edu.sg

Biography



Prof. Xiaoyuan (Shawn) Chen received his PhD in Chemistry from the University of Idaho (1999). After being a faculty at the University of Southern California, Stanford University and then Senior Investigator/Lab Chief at the National Institutes of Health, he is now Nasrat Muzayyin Professor in Medicine and Technology, Yong Loo Lin School of Medicine and Faculty of Engineering, National University of Singapore. His current research interests are mainly theranostics (radiotheranostics, nanotheranostics, immunotheranostics, magnetotheranostics, phototheranostics, etc.) that can be clinically translatable. He has published over 900 papers and numerous books (Total citations > 107,000, H index 170 based on Google scholar).

Abstract

Human serum albumin (HSA) is a heart-shaped protein with 3 homogeneous domains, each with 2 subdomains that own the same structural motifs. HSA contains 2 binding sites, one for carrying and delivering small aromatic molecules in blood circulation, the other for incorporating lipophilic carboxylate derivatives. This talk focuses on using Evans blue, a dye that binds reversibly to albumin, for multimodality imaging of blood pool and lymphatic system, and for modifying various peptides and drug molecules for cancer therapy. It appears that Evans blue conjugation prolongs circulation half-life and reduces renal clearance of molecules of interest, serving as an excellent (nano)platform for effective targeting and sustained drug release.