“Targeting Tumor Microenvironment for Immunotherapy“

The importance of the microenvironment in tumor growth and metastasis is well appreciated. We have previously discovered that tumor associated fibroblasts, similar to the tumor cells, highly express sigma-1 receptor to which aminoethyl anisamide (AEAA) is a high affinity ligand. Using AEAA as a targeting ligand, we have delivered genes and drugs to both the tumor cells and TAFs. Expression of relaxin in the TME is effective in deactivating hepatic stellate cells and inhibit fibrosis and metastasis in the liver. Expression of traps (antibody-like fusion proteins) in the TME also greatly remodel the immune microenvironment of the tumor. Delivery of small molecules, especially those selected from the traditional Chinese medicines, induces immunogenic cell death of the tumor cells and facilitate immunotherapy. These approaches will be highlighted in the talk.