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BLOCKING METASTATIC PROPERTIES OF HEAD AND NECK CANCER BY MULTIFUNCTIONAL NANOPARTICLE-BASED SARACATINIB

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The metastatic disease significantly decreases the survival rate of patients with head and neck squamous cell carcinoma (HNSCC). Src, a non-receptor tyrosine kinase, plays critical roles in tumor progression and metastasis. However, whether to effectively inhibit the function of Src in HNSCC remain elusive. We report, for the first time, blockade of Src kinase activity by saracatinib which effectively suppressed invasion and metastasis of HNSCC in preclinical animal models. Mechanistic assessment of the drug effects in HNSCC cells showed that saracatinib induced suppression of invasion/metastasis through downregulating the expression levels of Vimentin and Snail proteins and reversing Src-dependent epithelial-mesenchymal transition. In tests in mice, saracatinib was loaded into the novel multifunctional nanoparticles exhibited superior effects on suppression of HNSCC metastasis compared with free drug, which is mainly attributed to highly specific and efficient tumor-targeted drug delivery system. These findings and advances are of great importance to the development of Src-targeted nanomedicine as a novel treatment modality against HNSCC, especially for more extensive tumors.

Biography

Dr. Teng earned his Ph.D. from Sun Yat-sen University in 2007. He is an Assistant Professor in the Dept. of Oral Bio at AU. He has authored more than 70 articles and chapters in reputed journals and books and serves on the grant review panels of CDMRP-PCRP-Ad-CET, NYUAD, and NFSC. He has demonstrated an excellent commitment to serve the scientific community through numerous editorial and reviewing activities.

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