

Singapore makes further advancement in cancer nanomedicine

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Particles released by red blood cells are effective carriers for anti-cancer immunotherapy



A study led by researchers at the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), in collaboration with the Lee Kong Chian School of Medicine, Nanyang Technology University, Singapore (LKCMedicine, NTU Singapore) and A*STAR's Genome Institute of Singapore (GIS), has demonstrated that nano-sized vesicles released by red blood cells are a viable platform for delivering immunotherapeutic RNA molecules to suppress breast cancer growth and metastasis.

Published in the *Journal of Extracellular Vesicles*, the study successfully delivered RIG-I-activating RNAs using small, lipid membrane-bound particles released by red blood cells, called red blood cell extracellular vesicles (RBCEVs), to suppress cancer progression. The team had also discovered in earlier studies that these vesicles are ideal therapeutic carriers with a natural ability to deliver bioactive molecules to many cell types.

To further examine the function of RBCEVs in carrying a broader range of therapeutics to more cancer cell types, the team plans to conduct further research in collaboration with the National University Cancer Institute and Cancer Science Institute of Singapore.

Concurrently, RBCEV technologies are under intensive research at Carmine Therapeutics, an EVX Ventures company which aims to develop the next generation of gene therapy based on RBCEVs for treatments of rare diseases and cancer.