

Extracellular Vesicles in the Testicular Microenvironment

Ellis Kin Lam Fok

School of Biomedical Sciences, The Chinese University of Hong Kong, Hong Kong SAR, P. R. China

Email: ellisfok@cuhk.edu.hk

Extracellular vesicles (EVs) play a pivotal role in facilitating intercellular communication, serving as crucial mediators in a wide array of physiological processes. Within the male reproductive tract, seminal plasma brims with an abundant presence of EVs, released by the epididymis, prostate, and testicular cells. While extensive research has explored the roles of epididymal and prostatic EVs in sperm maturation, recent breakthroughs have unveiled captivating insights into the functions of EVs derived from testicular cells, specifically their remarkable impact on the regulation of normal spermatogenesis.

During this presentation, we will embark on a journey to unravel the intricate roles played by testicular EVs. These projects delve into the realm of male germline stem cells, investigating how testicular EVs precisely regulate their function. Additionally, we will explore the influence of these EVs on the sperm epigenome, shedding light on the mechanisms underlying the epigenetic inheritance. Furthermore, we will explore the field of lumicrine signaling, examining how testicular EVs participate in this intricate communication network along the male reproductive tract.

Our discoveries from these research endeavors are poised to illuminate the fundamental mechanisms behind sperm production. Moreover, they hold the potential to pave the way for the development of innovative interventions aimed at enhancing reproductive health in men.