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Establishment of prostate cancer and benign prostatic hyperplasia PDX (patient-derived xenograft) in super-SCID mice

Prostate cancer (PC) is the most common cancer in American men, and in Japanese men, it will be the most common cause of death in 2020. However, suitable and reliable animal model is not available. We succeeded to establish 3 types of prostate cancer PDX's in C3H/HeJ/NOs-scid, LPS- mice, although it was quite difficult in nude mice and usual SCID mice. First, PC 415 is hormone-sensitive and secreting PSA (no PSA in PC-3 cell line). Level of PSA increases with increasing transplanted tumor volume, while no growth was observed in female mice. The second is PC 688 which is hormone non-dependent and metastasizing to distant organs such as liver. The third is PC 750 which is hormone resistant and also metastasizing to distant organs such as lung. PSA is not detectable in both PC688 and 750. Microarray analysis revealed defective expression of TNFRSF21 in both PC 688 and 750. These PC-PDXs will be very useful for basic researches and drug development. Benign prostatic hyperplasia (BPH) is the most common disease, decreasing QOL in older men. We succeeded to maintain BPH tissues for long period (~2 years). Transplanted BPH tissues are well stained with AR, PSA, Ki67 and Cox2. Consequently, BPH-PDX is a good human model for basic researches on causality and protection of BPH and for drug development. We will show some suppression studies on PC and BPH.

Biography

Taisei Nomura has completed his MD and PhD at the age of 25 and 32 years, respectively from Osaka University and Postdoctoral studies in Surgery and Cancer Institute of Osaka University and Medical Genetics of University of Wisconsin. He was the Professor of Radiation Biology and Medical Genetics, Vice Dean, and Councilor, and now Professor Emeritus of Osaka University and Project Leader of National Institute of Biomedical Innovation, Health and Nutrition. He has published more than 180 papers in reputed international journals and has been serving as an Editorial Board Member of repute.

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