26G-ISMS30 **Application of Novel Highly Immunodeficient Mice for Patient Derived Xenograft (PDX) Model and Evaluation of Anticancer Therapy**

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Xenograft tumor models from patient-derived tumor tissue at low passage have been shown to conserve original tumor characteristics such as heterogeneous histology, clinical biomolecular signature, malignant phenotypes and genotypes, tumor architecture and tumor vasculature. Patient-derived tumor xenografts (PDX) are now believed to offer relevant predictive insights into clinical outcomes when evaluating the efficacy of novel cancer therapies. NOD/Scid based immunodeficient mice (ex. NOD/Scid, NOG, NSG, and NOJ mice) have been used as the recipient of human tumor transplantation due to the high forming efficiency, however, these mice are relatively weak, shorter life span and low breeding efficiency. We developed Balb/c Rag-1 Jak3 double deficient (Balb/c RJ) mice to cover these disadvantages. Breeding efficiency of Balb/c RJ mice are same as Balb/c mice and human hematopoietic cells and tumor cells are also successfully seeded and developed in Balb/c RJ mice. We transplanted patient derived cholangiocarcinoma (CCA) tissue into Balb/c RJ mice subcutaneously, and 16 out of 20 cases formed tumors in mice, and 4 CCA cell lines were established from PDX tissue culture.

PDX model using Balb/c RJ mice can be the useful tool for cancer research and drug development.