1. Record Nr. UNINA9910557257503321

Autore	Tsuji Moriya
Titolo	Development of Humanized Mouse Models for Infectious Diseases and Cancer
Pubbl/distr/stampa	Frontiers Media SA, 2020
Descrizione fisica	1 online resource (169 p.)
Soggetti	Immunology Medicine and Nursing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	While the traditional animal models contributed immensely to biomedical research there remain many knowledge gaps in translating the results from these to humans. In this context, humanized mice transplanted with functional human cells in a physiological setting offer many advantages in deriving pre-clinical data more akin to that seen in the natural human host. There have been many recent advances in the field that encompass derivation of new transgenic breeds of immunodeficient mice harboring human cytokines and HLA alleles that permit improved human cell engraftment and differentiation. The ability to generate humanized mice with a functional immune system together with human tissue transplantation such as a functional liver has now paved the way for new experimentation not previously feasible and is beginning to shed light on the complex picture of human pathophysiology and immunopathogenesis. Specifically, human specific pathogens such as HIV, hepatitis viruses and malaria parasites are being studied in these systems and important data on pathogen life cycles in human cells in vivo, viral latency and human specific immune responses are being gathered. In the hematology front, new data are emerging on graft versus host disease using these models. Patient derived xenograft models endowed with transplanted human immune cells are permitting evaluations of various immunotherapies and

identification of specific drugs for cancer therapy. Pathogenesis and immune responses for deadly pathogens, such as Ebola and newly emerged viruses like Zika are also being studied, adding a new twist and generating new knowledge in the context of human target cells in an in vivo setting.