Human Immune System-humanized mouse models for infectious diseases

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We have previously reported a human immune system-humanized mouse (HIS-DRAGA mouse: HLA-A2.HLA-DR4.Rag1KO.IL-2R□cKO.NOD) that upon infusion with CD34+ human hematopoietic stem cells (HSC) from human umbilical cord bloods (hUCB) reconstitutes a long-live, functional human immune system in the absence of the murine immune system, as well as epi/endothelial cells the lungs. HIS-DRAGA mouse was shown to function as **surrogate *in vivo* human models for HIV, Malaria, ZIKA, Scrub typhus, Influenza and recently for SARS-CoV-2 infections.** Infected mice can mount **virus specific human antibodies** and **develop human-like immunopathology.** The mouse is also a potential platform for developing therapeutic human monoclonal antibodies to various infectious agents. Hence, HIS-DRAGA offers unique advantages for studying the mechanisms of infection, organ-specific human-like immunopathology and the human immune responses at different stages of infection. It can also be utilized for testing the safety and efficacy of candidate vaccines and therapeutics including COVID-19.