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Genetics, Genomics and Epigenomics Approaches to Identify Key Players in SLE

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Systemic lupus erythematosus (SLE) is a complex chronic multisystem autoimmune disease with extensive clinical heterogeneity. Identification of novel genes in SLE has been challenging in the field due to complex genetics and epigenetics underlying disease pathogenesis. One of my research interests focuses on understanding genetic basis of SLE and identifying novel genes using state of the art next generation sequencing technologies. I have extensively used NZM2410 spontaneous mouse models of SLE to identify novel candidate genes using congenic dissection strategy combined with genomics and epigenomics approaches. This will focus on identification of KLF13 as a novel transcription factor that drives SLE pathogenesis by modifying the chromatin landscape of immune cells. In support of plethora of emerging studies, this study sheds light on the importance of non coding variations associated with epigenetics marks as regulators of inflammation and autoimmunity.

Biography:

Shaheen Khan is an Instructor in Department of Immunology at UT Southwestern Medical Center. She received her Ph.D in Genetics from Texas A & M University where she studied molecular mechanisms underlying estrogen-mediated breast cancer. She then did her post-doctoral training at UT Southwestern Medical Center in Department of Immunology. During this time she received extensive training in the field of immunology, mouse genetics and next generation sequencing technologies. She utilizes these approaches to address key questions of her own research interests. Her current research focuses on understanding genetic Basis of autoimmunity in mice as well as SLE/Pediatric lupus patient cohorts. She also has a deep interest in translational studies in the field of cancer immunotherapy and collaborates with clinicians at Simmons Cancer Center at UT Southwestern Medical center. This study is specifically focused to understand roles of patient's genetic and immune status in development of toxicity in patients undergoing immune checkpoint blockade therapy.