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Nota di contenuto	1. The epigenetics of autoimmunity: an overview -- 2. Immune cell development and epigenetics -- 3. DNA methylation and histone modifications in autoimmunity -- 4. MicroRNA and T helper cell-mediated immune responses -- 5. Long noncoding RNAs in the immune response -- 6. Epigenetics of systemic lupus erythematosus -- 7. Rheumatoid arthritis and epigenetics -- 8. Epigenetic modifications in multiple sclerosis pathophysiology: potential diagnostic and therapeutic applications -- 9. Type 1 diabetes and epigenetics -- 10. Systemic sclerosis and epigenetics -- 11. Primary Sjogren's syndrome and epigenetics -- 12. Autoimmune thyroid diseases and epigenetics -- 13. The epigenetics of primary biliary cholangitis -- 14. Immune-mediated pulmonary disease and epigenetics -- 15. The epigenetics of autoimmunity and epigenetic drug discovery -- 16. Treatment of autoimmune diseases and prevention of transplant rejection and graft-versus-host disease by regulatory T cells: the state of the art and perspectives -- 17. Noncoding RNA-targeted therapeutics in

autoimmune diseases: from bench to bedside -- 18. Future challenges and prospects for the epigenetics of autoimmunity.

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Sommario/riassunto

The Epigenetics of Autoimmunity covers a topic directly related to translational epigenetics. Via epigenetic mechanisms, a number of internal and external environmental risk factors, including smoking, nutrition, viral infection and the exposure to chemicals, could exert their influence on the pathogenesis of autoimmune diseases. Such factors could impact the epigenetic mechanisms, which, in turn, build relationship with the regulation of gene expression, and eventually triggering immunologic events that result in instability of immune system. Since epigenetic aberrations are known to play a key role in a long list of human diseases, the translational significance of autoimmunity epigenetics is very high. To bridge the gap between environmental and genetic factors, over the past few years, great progress has been made in identifying detailed epigenetic mechanisms for autoimmune diseases. Furthermore, with rapid advances in technological development, high-throughput screening approaches and other novel technologies support the systematic investigations and facilitate the epigenetic identification. This book covers autoimmunity epigenetics from a disease-oriented perspective and several chapters are presented that provide advances in wide-spread disorders or diseases such as systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), multiple sclerosis (MS), type 1 diabetes (T1DM), systemic sclerosis (SSc), primary Sjögren's syndrome (pSS) and autoimmune thyroid diseases (AITDs). These emerging epigenetic studies provide new insights into autoimmune diseases, raising great expectations among researchers and clinicians. This seminal book on this topic comprehensively covers the most recent advances in this exciting and rapidly developing new science. They might reveal not only new clinical biomarkers for diagnosis and disease progression, but also novel targets for potential epigenetic therapeutic treatment.

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