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## Bidirectional interactions between mesenchymal stem cells and immune responses: Good grace and bad influence

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Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences/Shanghai Jiaotong University School of Medicine, China Mesenchymal stem cells (MSCs) exist in almost all tissues and are crucial for maintaining cellular homeostasis in multicellular organisms. They provide the ultimate cell source for tissue repair and regeneration. Under pathological conditions, these cells are awakened, activated, and mobilized to tissue sites with damage. Since tissue damage is often accompanied by inflammatory factors from both innate and adaptive immune responses, it is not surprising that MSCs intricately interact with inflammatory factors at sites of tissue damage. Depending on the types and persistence of pro-inflammatory factors, activated MSCs may lead either to partial or complete tissue repair, or to chronic inflammation and further tissue damage, such as fibrosis and cancer. Indeed, recent studies have shown that there is bidirectional interaction between MSCs and inflammatory cells. Many details of these interactions, however, remain to be elucidated. Detailed investigations on the molecular mechanisms underlining this interaction will provide critical information for designing better clinical protocols with MSCs and understanding of various pathological processes.

## Biography

Yufang Shi is a Professor and the Director of the Institute of Health Sciences, Shanghai Institutes for Biological Sciences of Chinese Academy of Sciences & Shanghai Jiao Tong University School of Medicine. He is also a University Professor of the Child Health Institute of New Jersey at Robert Wood Johnson Medical School, University of Medicine and Dentistry of New Jersey. He received a veterinary degree from Shandong Agricultural University, China. His M.Sc. in immunoparasitology and Ph.D. in Immunology were from University of Alberta. His postdoctoral training was at the University of Toronto. From 1995 to 2001, he was an Assistant Professor and Associate Professor at the Holland Laboratory of American Red Cross and George Washington University. He move to Robert Wood Johnson Medical School, University of Medicine and Dentistry of New Jersey in 2001 and was promoted to a Full Professor with a University Professor title in 2003. Since 1988, Dr. Shi has been studying apoptosis, especially in T cells. He published more than 130 papers on activation-induced cell death (AICD), role of c-myc in apoptosis, T cell immunobiology, and mesenchymal stem cell immunology in Nature, Science, Nature Medicine, Cell Stem Cell, Immunity, J. Exp. Med and other journals. Dr. Shi is a Receiving Editor of Oncogene and an Editor of Cell Death and Diseases. He was an Associate Editor of the Journal of Immunology, an Editor of Cell Research and is currently on the editorial boards of Journal of Biological Chemistry, Cellular and Molecular Immunology, Journal of Molecular Cell Biology, and American Journal of Translational Research