

## Immunoregulation of Innate Immune Cells in the Disease

Wei Lin\*

Department of Microbiology, Shandong Academy of Medical Sciences, 18877 Jingshi Road, Jinan, Shandong 250030, PR China

\*Corresponding author: Wei Lin, Department of Microbiology, Shandong Academy of Medical Sciences, 18877 Jingshi Road, Jinan, Shandong 250030, PR China, Tel: 86-15098926353; E-mail: linw1978@163.com

Received date: May 01, 2017; Accepted date: May 03, 2017; Published date: May 05, 2017

Copyright: © 2017 Lin W. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Lin W (2017) Immunoregulation of Innate Immune Cells in the Disease. J Immuno Biol 2: e105. doi:10.4172/2476-1966.1000e104

### Editorial

I am very pleasure to announce the launch of special issue "Immunoregulation of Innate Immune Cells in the Disease" in the Journal of Immunobiology. This issue will cover basic and clinical research about how to regulate innate-immune response to prevent the disease. This issue will cover several categories of manuscripts including original Research articles, Short-communications, Review articles, Case reports, Commentaries and opinion article. We welcome the studies including immunology, biological, and cell-biology and relative research in all physiological and pathological processes.

Innate immune cells such as dendritic cells (DCs), natural killer cells (NK cells), macrophage, and so on, are a first line of defense against infections. As a double-edged sword, innate immune cells could cause adaptive immune response and defense microbiology invasion, and they also damage the tissue to cause the disease. Thus, regulating the function of innate immune cells to balance the immune response and promote innate immune cells to play an immune surveillance role is important for preventing the disease. Exploring new regulatory factors and explaining new regulatory mechanisms of innate immunology cells could be better to find a therapeutic target against diseases.

The conversional factors regulating innate-immune response comprise cytokines, chemokines, and membrane surface receptors which include stimulatory receptors, inhibitory receptors, and adhesion molecules, and so on [1-3]. Recently, some new regulators have been reported to participate into the regulation of innate immune response, such as cytoskeletal proteins, microRNA, nuclear receptors, vitamin D receptor, and so on. These factors regulate the function of innate immunology cells not only by changing the signalling pathway, genetically transcription, but also by regulating the arrangement of skeleton proteins, or cell-metabolism of innate immune cells to mediate phenotype, maturation, and function of innate immunology cells [3-7]. This special issue provides us with a better understanding of potential regulators and possible mechanism of them in regulating innate immune response, which suggests possible targets for preventing disease.

In this special issue, we review the role of cytoskeletal proteins in regulating innate immune response. Cytoskeletal proteins are complex network in the cells, and are classified as three main proteins including microfilaments (actin filaments), intermediate filaments and microtubules. They not only main the shape of cells, but also are

associated with the function of cells. They participate in the process of antigen up-taking, antigen presenting and forming the contact with adaptive immune cells. Foreign microorganisms enter into to cells to escape the surveillance of innate immune cells, by binding or damaging the cytoskeletal proteins to destroy the function of cells. Regulating the arrangement of cytoskeletal proteins could mediate the immune response. Additionally, we also investigate that IFN- $\gamma$  regulate the arrangement of cytoskeletal proteins to change the antigens up-taking and the way of antigen endocytosis of innate immune cells to mediate immune response.

Additionally, we also contain the currently available factors which have a new mechanism or signalling pathway in regulating innate immune response, and potential regulators, for example micro RNA, cytoskeletal proteins, participate into the innate immune response in the disease, as well as the interaction between foreign microorganisms and innate immune cells to explore the potation targets to defense the development of disease. We trust "Immunoregulation of Innate Immune Cells in the Disease" Issue would be favourable for clinical and basic medical researcher. We hope the scientists to submit their works to this issue in the journal.

### References

1. Popko K, Gorska E (2015) The role of natural killer cells in pathogenesis of autoimmune diseases. *Cent Eur J Immunol* 40: 470-476.
2. Mandal A, Viswanathan C (2015) Natural killer cells: In health and disease. *Hematol Oncol Stem Cell Ther* 8: 47-55.
3. Koztor N, Lechmann M, Zinser E, Steinkasserer A (2004) The soluble form of CD83 dramatically changes the cytoskeleton of dendritic cells. *Immunobiology* 209: 129-140.
4. Xu X, Liu X, Long J, Hu Z, Zheng Q, et al. (2017) Interleukin-10 reorganizes the cytoskeleton of mature dendritic cells leading to their impaired biophysical properties and motilities. *PLoS One* 12: e0172523.
5. Lin W, Suo Y, Deng Y, Fan Z, Zheng Y, et al. (2015) Morphological change of CD4(+) T cell during contact with DC modulates T-cell activation by accumulation of F-actin in the immunology synapse. *BMC Immunol* 16: 49.
6. Chen J, Ganguly A, Mucsi AD, Meng J, Yan J, et al. (2017) Strong adhesion by regulatory T cells induces dendritic cell cytoskeletal polarization and contact-dependent lethargy. *J Exp Med* 214: 327-338.
7. Cameron AM, Lawless SJ, Pearce EJ (2016) Metabolism and acetylation in innate immune cell function and fate. *Semin Immunol* 28: 408-416.

This article was originally published in a special issue, entitled: "Immunoregulation of Innate Immune Cells in the Disease", Edited by Wei Lin, Department of microbiology, Shandong Academy of Medical Sciences, People's Republic of China