Mediators of Inflammation

Hindawi

Special Issue on

Posttranscriptional Regulation of Proinflammatory Cytokine Production

CALL FOR PAPERS

Inflammatory cytokines are critical mediators of inflammation and host defense. The regulation of inflammatory cytokine production is critical for innate processes such as cell proliferation and angiogenesis, as well as responses to exogenous stimuli including radiation, stress, and infection. The aberrant expression of cytokines has been correlated with inflammatory diseases, autoimmune disorders, and cancers. Regulation of cytokine production can occur at various levels, including transcription, mRNA export, and posttranscriptional and translational levels. Although transcriptional control of inflammatory gene expression has been studied extensively, the importance of posttranscriptional regulation is less well defined.

The critical role of posttranscriptional regulation for gene expression has been highlighted in a recent gene array study, in which ~50% of stress-induced genes were found to be regulated primarily at the level of mRNA stability. Changes in the half-life of labile mRNAs are often in the range of two- to fourfold fluctuations. Though seemingly modest, alterations of this amplitude have been shown to result in greater than 1,000- fold difference in steady-state mRNA levels, which in turn, can lead to dramatic changes in protein production.

We here invite scientists to contribute original research and review articles that will help researchers in the field to understand the posttranscriptional regulatory mechanisms of inflammatory cytokine production in health and diseases. We encourage submission of manuscripts reporting original studies at molecular, cellular, and tissue levels, including in vitro studies and those using animal models or cells/tissues from patients.

Potential topics include, but are not limited to:

- The regulatory mechanisms of mRNA stability of inflammatory cytokines
- The roles of RNA-binding proteins and microRNAs in the regulation of cytokine production
- The functions of RNA-binding proteins in inflammatory diseases such as atherosclerosis, diabetes, and cancers
- Structural basis of RNA-binding proteins in regulation of cytokine mRNA stability
- Interplay between RNA-binding proteins and microRNAs in the regulation of cytokine gene expression
- Regulation of RNA-binding protein function by inflammatory signaling pathways
- Assembly and regulation of P-body, stress body, exosome, and polysome

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/mi/ptr/.

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