Special Issue

The Role of Long Non-Coding RNAs in Stress and Diseases

Message from the Guest Editors

Long non-coding RNA (IncRNA) genes occupy a significant fraction of the genomes of complex organisms. They are essential for fine-tuning the cellular response to immediate and prolonged stress conditions. In response to short-term stress, IncRNAs rapidly adjust cellular activities by influencing gene transcription, protein translation, and signal transduction. They can activate stress-responsive genes, modulate inflammatory pathways, and enhance cell survival mechanisms such as autophagy and apoptosis. They regulate cells' core pathways of oxidative stress response, DNA damage and repair response, maintaining cellular homeostasis. Under prolonged stress, IncRNAs help cells adapt through sustained epigenetic changes in the gene expression of the required stress-protective pathways. By acting as molecular scaffolds, decoys, or signals, IncRNAs finetune cellular responses, making them potential markers of disease classification and therapeutic targets for multifactorial diseases driven by genetic and environmental stressors. We welcome the submission of manuscripts discussing the exciting and diverse processes related to IncRNA functions in homeostasis and diseases.

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Message from the Editor-in-Chief

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