

**Regulation of Mammalian Gene Dosage by Long Noncoding RNAs.**

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**Public Summary:**

Noncoding RNAs are a subset of RNA transcripts with limited protein coding potential. Recent studies suggest the existence of thousands of noncoding RNAs. However the functions and mechanisms of those newly identified noncoding RNAs has not been well studied. Here we summarize recent advancements of noncoding RNAs research especially how Long Noncoding RNAs regulates gene dosage in mammalian cells.

**Scientific Abstract:**

Recent transcriptome studies suggest that long noncoding RNAs (lncRNAs) are key components of the mammalian genome, and their study has become a new frontier in biomedical research. In fact, lncRNAs in the mammalian genome were identified and studied at particular epigenetic loci, including imprinted loci and X-chromosome inactivation center, at least two decades ago-long before development of high throughput sequencing technology. Since then, researchers have found that lncRNAs play essential roles in various biological processes, mostly during development. Since much of our understanding of lncRNAs originates from our knowledge of these well-established lncRNAs, in this review we will focus on lncRNAs from the X-chromosome inactivation center and the Dlk1-Dio3 imprinted cluster as examples of lncRNA mechanisms functioning in the epigenetic regulation of mammalian genes.

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