

**Molecular Mechanisms of Long Noncoding RNAs.**

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**Public Summary:**

Long noncoding RNAs (lncRNAs) are an important class of pervasive genes involved in a variety of biological functions. Here we discuss the emerging archetypes of molecular functions that lncRNAs execute-as signals, decoys, guides, and scaffolds. For each archetype, examples from several disparate biological contexts illustrate the commonality of the molecular mechanisms, and these mechanistic views provide useful explanations and predictions of biological outcomes. These archetypes of lncRNA function may be a useful framework to consider how lncRNAs acquire properties as biological signal transducers and hint at their possible origins in evolution. As new lncRNAs are being discovered at a rapid pace, the molecular mechanisms of lncRNAs are likely to be enriched and diversified.

**Scientific Abstract:**

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