

Identification of a novel long noncoding RNA that promotes osteoblast differentiation

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© 2018 Wiley Periodicals, Inc. Long noncoding RNAs (lncRNAs) are a heterogeneous class of transcripts, longer than 200 nucleotides, 5'-capped, polyadenylated, and poorly conserved among mammalian species. Several studies have shown the contribution of lncRNAs to different cellular processes, including regulation of the chromatin structure, control of messenger RNA translation, regulation of gene transcription, regulation of embryonic pluripotency, and differentiation. Although limited numbers of functional lncRNAs have been identified so far, the immense regulatory potential of these RNAs is already evident, indicating that a functional characterization of lncRNAs is needed. In this study, mouse preosteoblastic cells were induced to differentiate into osteoblasts. At 3 sequential differentiation stages, total RNA was isolated and libraries were constructed for Illumina sequencing. The resulting sequences were aligned and transcript abundances were determined. New lncRNA candidates that