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L'Hôtel-Dieu de Québec  
Centre hospitalier universitaire de Québec

# Club de lecture

## A large intergenic noncoding RNA induced by p53 mediates global gene repression in the p53 response

Huarte M, Guttman M, Feldser D, Garber M, Koziol MJ, Kenzelmann-Broz D, Khalil AM, Zuk O, Amit I, Rabani M, Attardi LD, Regev A, Lander ES, Jacks T, Rinn JL.  
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### Abstract

Recently, more than 1000 large intergenic noncoding RNAs (lincRNAs) have been reported. These RNAs are evolutionarily conserved in mammalian genomes and thus presumably function in diverse biological processes. Here, we report the identification of lincRNAs that are regulated by p53. One of these lincRNAs (lincRNA-p21) serves as a repressor in p53-dependent transcriptional responses. Inhibition of lincRNA-p21 affects the expression of hundreds of gene targets enriched for genes normally repressed by p53. The observed transcriptional repression by lincRNA-p21 is mediated through the physical association with hnRNP-K. This interaction is required for proper genomic localization of hnRNP-K at repressed genes and regulation of p53 mediates apoptosis. We propose a model whereby transcription factors activate lincRNAs that serve as key repressors by physically associating with repressive complexes and modulate their localization to sets of previously active genes.

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**Jeudi le 9 septembre 2010, à 11h30**  
**Auditorium du St-Patrick**