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Title: NEW TECHNOLOGIES TO INVESTIGATE RNA-CHROMATIN INTERACTIONS

Abstract: In addition to the many mRNAs transcribed by mammalian genomes, there are also many lncRNAs that have been proposed to have a variety of cellular functions (1). Abnormal expression of these lncRNAs can lead to altered gene expression profiles, improper differentiation, and diseases such as cancer (2). Gaining insight into the expression and localization patterns of certain lncRNAs under normal cellular conditions will help us understand how they are misregulated in the context of human disease. Here we have developed a new technique, Cas-CUT&TAG (Figure 1), to investigate lncRNA-chromatin interactions. For proof of concept, we will investigate the lncRNA Neat1, which has been shown to be abnormally regulated in cancer and associated with poor prognosis.