

## POSTTRANSLATIONAL INTERFERENCE OF TY1 RETROTRANSPOSITION BY ANTISENSE RNAS

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Transposable elements impact genome function by altering gene expression and mediating chromosome rearrangements. As a result, organisms have evolved mechanisms, such as RNA-interference, to minimize the level of transposition. However, organisms without the conserved RNAi pathways, like *S. cerevisiae*, must use other mechanisms to prevent transposon movement. Here we provide evidence that antisense (AS) RNAs from the retrovirus-like element Ty1 inhibit retrotransposition posttranslationally in certain *Saccharomyces* species. Multiple Ty1AS transcripts overlap Ty1 sequences necessary for copy number control (CNC) and inhibit transposition *in trans*. Altering Ty1 copy number, deleting sequences in the CNC region that are required for reverse transcription, or eliminating RNA Processing-body functions dramatically affect Ty1AS RNA level and localization, and Ty1 movement. Ty1AS RNAs are enriched in virus-like particles and are associated with a dramatic decrease in the level of integrase, less reverse transcriptase, and an inability to synthesize Ty1 cDNA. Thus, Ty1AS RNAs are part of an intrinsic mechanism that limits retrotransposition by reducing the level of proteins required for replication and integration.