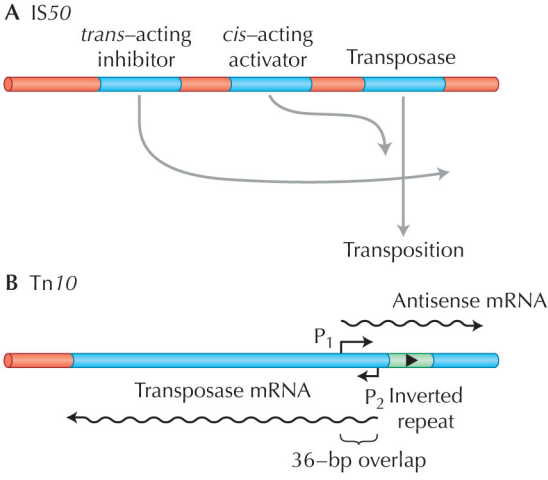


**FIGURE 21.11.** Because bacteria and archaea rarely indulge in sex, their transposons have evolved mechanisms that prevent excessive transposition. (*A*) The DNA-based transposon IS*50* produces a *cis*-acting activator of transposition and also a *trans*-acting inhibitor: As copy number increases, levels of the inhibitor rise and transposition ceases. (*B*) Another DNA-based transposon, Tn*10*, has two promoters near the start of the transposase gene. One initiates transcription of the transposase messenger RNA (mRNA), whereas the other initiates transcription in the opposite direction, producing an antisense RNA. At high copy number, this binds to the transposase mRNA and prevents its translation.