

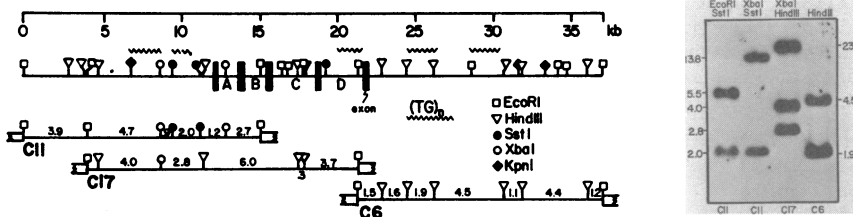
## The rat prolactin gene contains at least six poly(dT-dG)·poly(dC-dA) repeats

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Poly(dT-dG)·poly(dC-dA) is a dispersed repeat element ubiquitous to the eukaryotic genome (1,2) and absent from eu- and archaeobacterial genomes (2,3). It is a weak transcriptional enhancer in transient expression vectors (4) and undergoes enhanced homologous recombination in SV40 DNA in transfected cells (5). In mammals, the TG-element is repeated 50,000-100,000 times per haploid genome. Two TG-repeats have been sequenced in the 5' flank of the rat prolactin (rPRL) gene at 1.8 and 1.4 kb upstream from the CAP site; specific binding of the estrogen receptor has been found in this region as well (6). We have found another 4 TG-elements in the rPRL gene in 3  $\lambda$  genomic clones harboring the 10 kb gene and 27 kb of flanking DNA. The Southern blot shows their location in the  $\lambda$  clones after restriction enzyme digestion and probing with  $^{32}$ P-labeled poly(dT-dG)·poly(dC-dA).  $\lambda$  C11 contains the 2 sequenced repeats in the 2 kb *Sst*I fragment and another in the upstream 5.5 *Eco*RI/*Sst*I fragment that has been mapped between the *Kpn*I and *Xba*I sites.  $\lambda$  C17 contains an additional TG-repeat in the 23.5 fragment from the *Hind*III site in intron C through the left arm of  $\lambda$  that has been mapped to 1.1 kb of unsequenced DNA between the *Sst*I and *Eco*RI sites in intron D. 2 TG-repeats occur in  $\lambda$  C6 in the 1.8 and 4.5 kb *Hind*III fragments; the latter lies between the *Eco*RI and *Hind*III sites.



In summary, 37 kb of the rPRL gene and flanking DNA contain at least 6 TG-elements, the highest reported density in a mammalian gene to our knowledge. All were found at high stringency and must be greater than 30 bp in length with few mismatches (3). A TG-repeat in the 1.6 kb *Bgl*II/*Bam*HI fragment has also been found in the 5' flanking region of estrogen unresponsive rat growth hormone gene (not shown). This observation and the high density of the element in the rPRL gene imply that the TG-repeat cannot be a sole Bsequence determinant of estrogen responsiveness of the rPRL gene.

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