wild-type sequence from the corresponding non-identical gene through gene conversion [Ernst et al., 1982]. The tandemly repeated genes encoding rRNA in yeast undergo gene conversion/unequal sister chromatid exchange leading to homogenization of the tandemly repeated rDNA array [Keil and Roeder, 1984]. In higher eukaryotes, gene conversion also appears to have generated regions of homology within repeated genes including globin genes [Slightom et al., 1980; Liebhaber et al., 1981], ribosomal genes [Krystal et al., 1981; Arnheim et al., 1980] and immunoglobulin genes [Baltimore, 1981; Schreider et al., 1981].

The data above strongly suggest that the sequences of two unspliced introns in bt2-7503 originated from the intron sequences of Bt2-like by nonhomologous recombination between Bt2 and Bt2-like. Figure 25,A is a schematic representation of nonhomologous recombination between Bt2 and Bt2-like. The nucleotide sequences across the recombination junction are displayed in Figure 25,B. (a) represents the nucleotide sequence of Bt2, (b) represents the nucleotide sequence of Bt2-like and the nucleotide sequence in (c) is that of recombinational product, recombined bt2-7503. The vertical lines between nucleotides represent the nucleotide matches. Asterisk indicates the junction between exon and intron. The exon sequences in the mutational region and the sequence of first 10bp at 5' of introns show perfect identity between two genes. To pair the nonhomologous chromosomes, two genes may