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A Chromosome Bin Map of 2148 Expressed Sequence Tag Loci of Wheat Homoeologous Group 7

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distribution of EST loci along the physical length of each missing segment was analyzed by estimating the ratio of the

Figure

Figure 1.—*Continued.*

mosomes 5B and 5D, and instead of mapping to a similar region on chromosome 5A, they mapped to the short arm of chromosome 7B (Figure 2B).

Ordering the EST loci among chromosome bins and comparison of map positions with rice and barley: Of the 117 probes (excluding those involved in the 7BS translocation) placed on the consensus map of homoeologous group 7, the possible order for 38 probes was determined on the basis of the molecular markers to consensus chromosome 7 of wheat, eight of which maintained the same relative order in both genomes. Three EST probes (BE500615, BE446380, and BE424174) mapped in reverse order into the 0.45–0.59 region on the short arm of wheat chromosome 7 (Figure 4).

DISCUSSION

Chromosome bin maps of 7A, 7B, and 7D: A totan4i6.7556 208.20(

TABLE 1

Chromosome bins with relative physical length, number of loci per bin, and ratio of

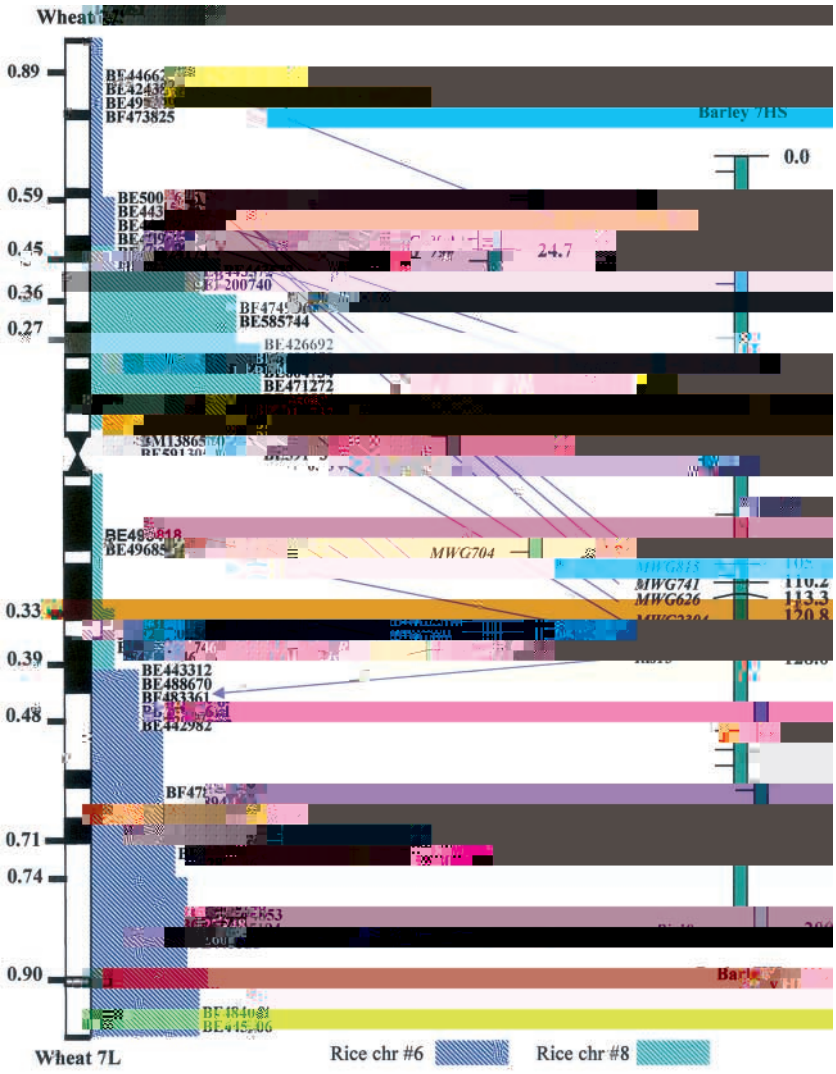

Figure 4.—Comparison of map positions of molecular markers of rice and barley with tentatively ordered EST loci on the consensus map of homoeologous group 7. The linkage map of barley chromosome 7, adapted from Künzel *et al.* (2000), is depicted on the right. The stepwise increases in the height of the colored diagonal lines were used in wheat group 7 to differentiate among the regions.

loci in distal regions was correlated with a higher rate of recombination. Conversely, a lower density of EST loci in proximal regions was correlated with a lower rate of recombination (

Triticeae genomes and will be useful in genetic mapping of orthologous genes. These regions may be of significance in understanding genome evolution among Triticeae species by analyzing chromosome structural re-

to the growth and shrinkage of repeated nucleotide Anderson *et al.* (1992) supported the proposed trans-

Bennett, M. D., and