

TABLE 1**Distribution of EST probes and loci among the group 1 chromosomes in wheat**

All ESTs

ESTs with all bands mapped

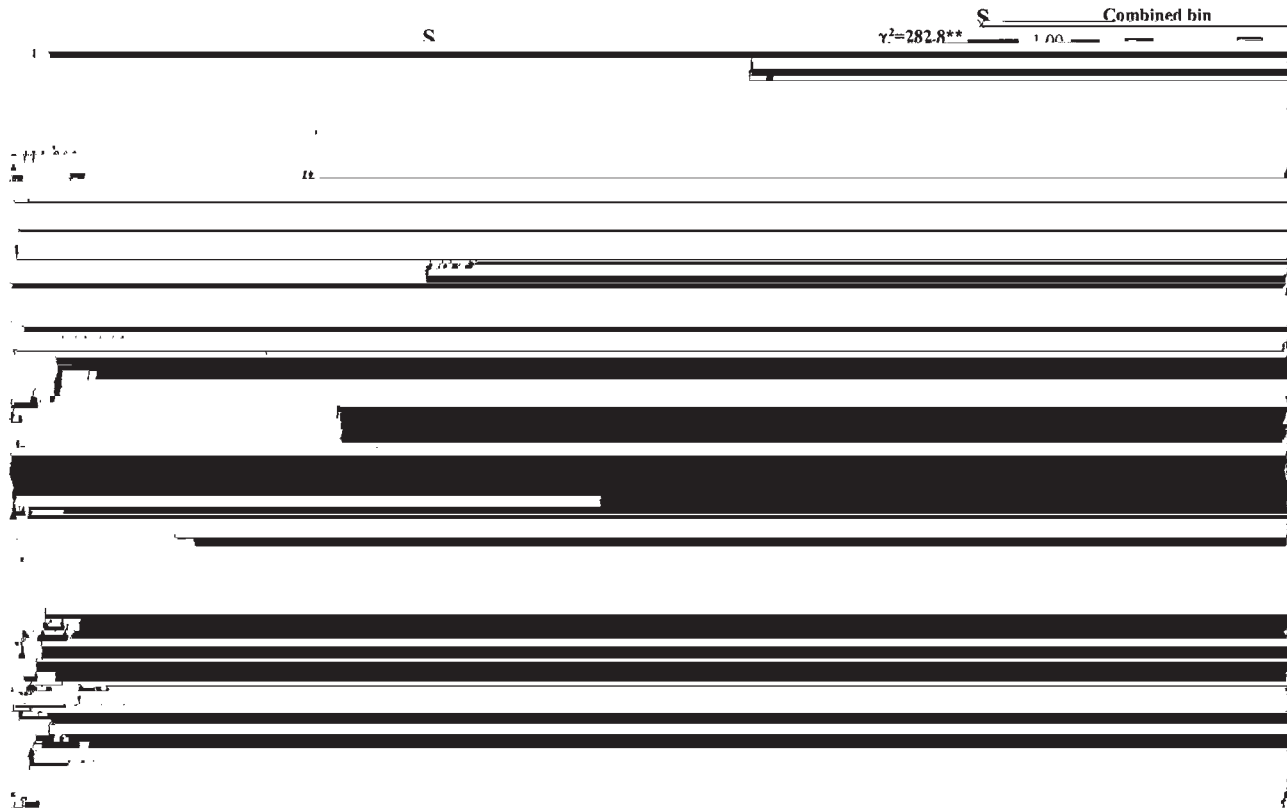


TABLE 2
Distribution of EST loci between chromosome arms

Chromosome	Item	Chromosome arm		Total ^a
		Long	Short	
1A	Observed	371	215	586
	Expected ^b	383.80	202.20	586
	Deviation	12.80	12.80	0
	^z	1.24 (<i>P</i> 0.265)		
	Gene density	0.97	1.06	
1B	Observed	483	326	809
	Expected ^b	509.40	299.60	809
	Deviation	26.40	26.40	0
	^z	3.69 (<i>P</i> 0.054)		
	Gene density	0.95	1.09	
1D	Observed	459	222	681
	Expected ^b	428.90	252.10	681
	Deviation	30.10	30.10	0
	^z	23.69 (<i>P</i> 0.054)		
Gene densi55	0.2arms			

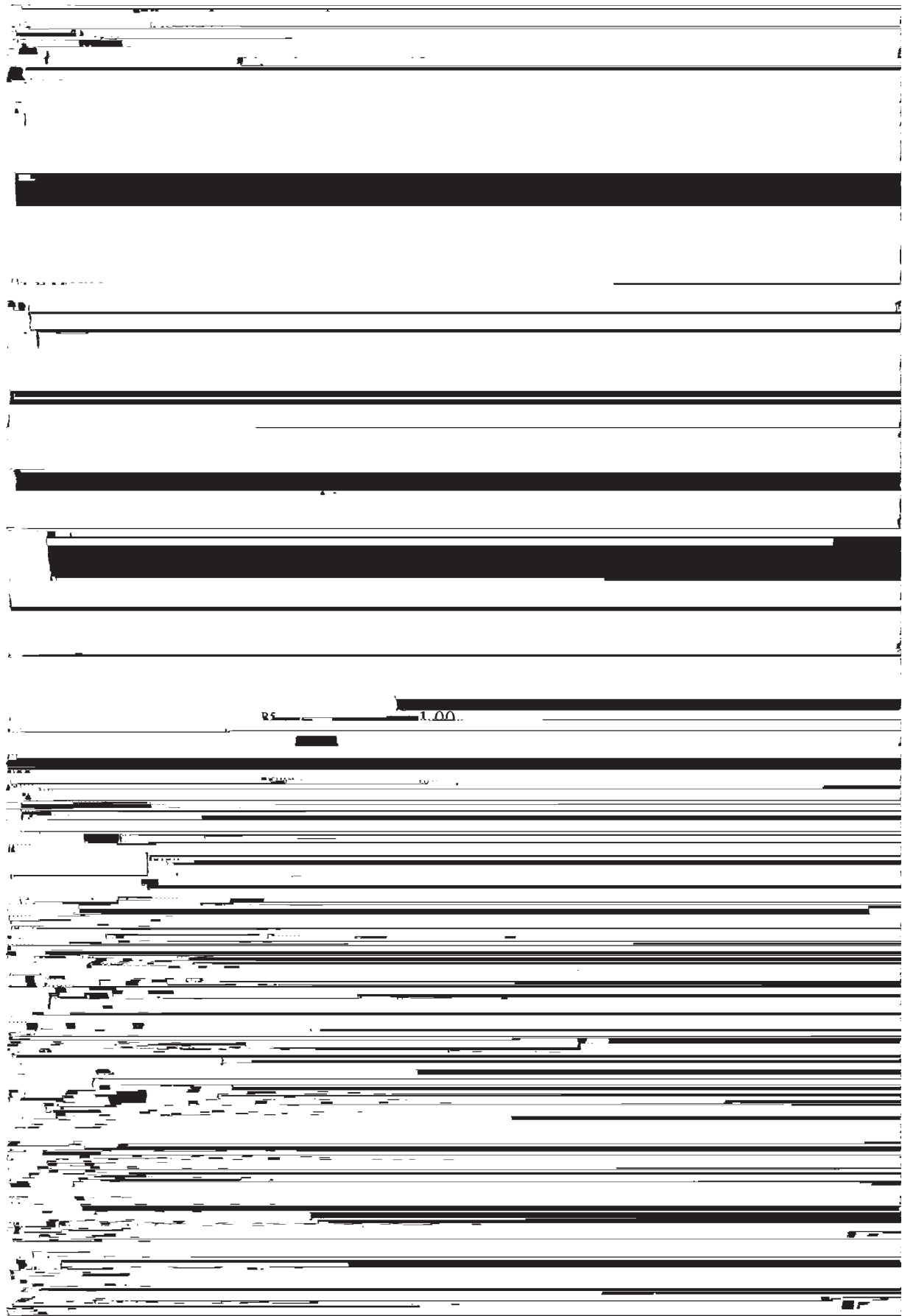
TABLE 3**EST probes mapped to group 1 chromosomes and to other homoeologous groups in wheat**

No. of duplicated ESTs	Percentage of duplicated
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TABLE 4

Distribution of group 1 ESTs having duplicated loci in other chromosome groups

Homoeologous group



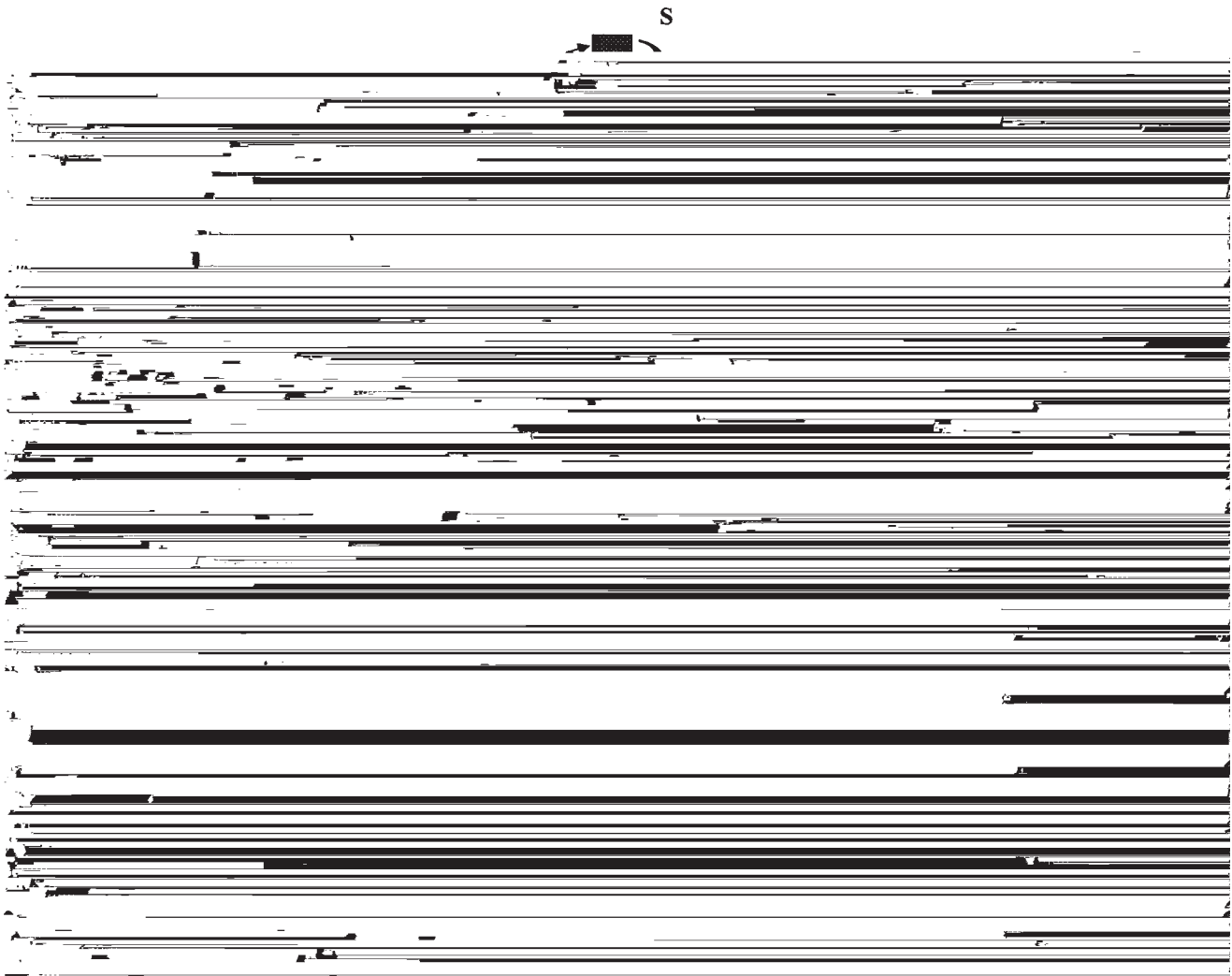


Figure 3.—Chromosome locations of mapped ESTs detecting anomalies. The GenBank accession numbers for the ESTs contained in the anomalies are included next to the appropriate chromosome intervals. A letter code was given to each anomaly for reference.

meric/proximal regions are relatively gene poor and distal/telomeric regions on the short arms are gene rich (Gill *et al.* 1996a,b; Faris *et al.* 2000). Our results further showed that the telomeric regions on the long arms had a lower gene density than the middle portion of the arms, which contained EST-rich regions/clusters.

There are ESTs in the distal bins, but they are located in the proximal regions of those bins and are not at the ends of the chromosomes. The consensus map with a higher number of long-arm bins than the individual chromosomes clearly points this out (Figure 1).

We found that the number of ESTs mapped to the

Figure 2.—Schematic orthologous map of wheat consensus chromosome 1 ESTs with rice chromosomes 5 and 10. The wheat

1 is not as gene poor as the counterpart of the short species (Paterson *et al.* 1996). Attempts to establish arm apu.p2 TD[(76Figure2 TD[(1m)-330(and)-33026).)]TJ/621641-12 TD(Khatain)Tj/41-1815i @TD(62) linearly between genomes

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1992 Development of a chromosomal arm map for wheat based

chromosome bin mapping of ESTs. *Funct. Integr. Genomics* **3**:
39–55.
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