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Physical Map of *Zymomonas mobilis* ZM4 Genome

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The physical map of *Zymomonas mobilis* ZM4 genome was constructed by southern hybridization of either *Pac*I or *Pme*I-digested DNA fragments separated by pulsed field gel electrophoresis(PEGE), and of the linking clone analyses. The *Z. mobilis* genome was digested with the restriction enzymes, *Pme*I(GTTTAAAC) and *Pac*I(TTAATTAA) into 15 and 19 fragments sizing from 625kb to 3kb(*Pme*I), 525kb to 7kb(*Pac*I). The genome size of *Z. mobilis* was determined by comparing the size of DNA fragments digested with restriction enzymes, *Pme*I and *Pac*I, to the size of phage lambda DNA concatemer as size marker. The mean size of sum of these fragments is about 2,088kb. To align the *Pme*I fragments on the chromosome, each *Pac*I fragment was hybridized to *Pme*I filter. The *Pme*I fragments A,B, H, J, M and G were hybridized by *Pac*I #1 fragment. The *Pac*I # 6,7,8,10,12 and 13 fragments were hybridized by *Pme*I A fragment. To align these fragments, linking clones and *Not*I fragments were used as the linking probes. The DNA fragment for 16S rRNA was amplified by PCR method, and used as rRNA probe. In the genome of *Z. mobilis*, two rRNA operons were localized. The 15 genes and operons of *Zymomonas* were amplified by PCR method, and were localized on the map. In this study, we constructed the physical map of the Z. mobilis ZM4 genome by using *Pme*I and *Pac*I, and localized 15 genes on physical map.