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## Pachytene/Fiber-FISH: Applications in Fine Physical Mapping of Plant Genomes

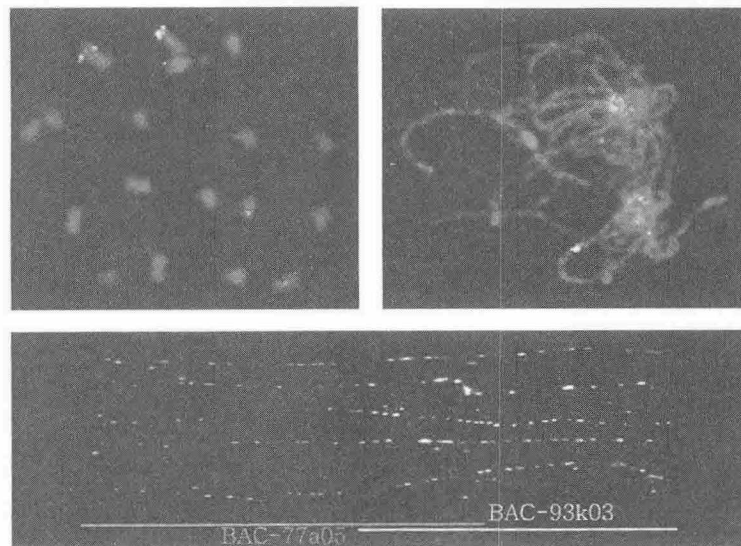
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Physical mapping by FISH to somatic metaphase complements was insufficient for the accurate mapping of genes on chromosomes due to the low resolution of contiguous DNA sequences. Such limitation can be overcome using a combination of FISH techniques for meiotic prophase (pachytene) and extended DNA fibers. The former provides 10-50 times more resolution and highly differentiated heterochromatin patterns enabling identification of individual chromosomes, the latter reveals the accurate positions and molecular size of the probes on linear DNAs at extremely high resolution and detection limits. We tested this

system for several crop species and found the method especially attractive for mapping combinations of repetitive and unique DNA sequences.

### Acknowledgments

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**Figure 1.** FISH mapping of BAC clones on *B. rapa* chromosome and extended DNA fibers.