Color Plate Section

Chapter 9 Figure 9

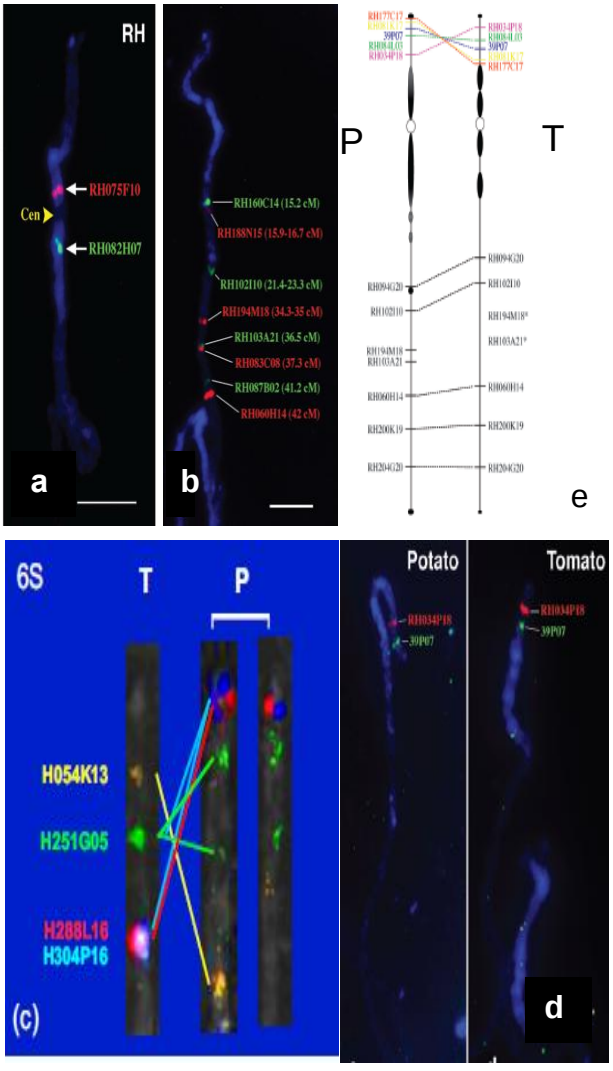

Figure 9-1 FISH mapping of AFLP marker-anchored BAC clones on potato pachytene chromosome VI.
(Panels a-b and d-e – reprinted with permission from Iovene et al. 2008; panel c – reprinted with permission from Tang et al. 2008). (a) Determination of the genetic position of the centromere of potato chromosome VI of genotype RH by FISH mapping of BACs RH075F10 and RH082H07. Scale bar = 5 µm. (b) FISH mapping of eight BACs located in the euchromatic region on the long arm of the chromosome. Scale bar = 5 µm. (c) Cross-species FISH of tomato BACs on the short arm of pachytene chromosome VI of tomato (T) and potato (P) showed inverted order between the homeologues. BAC H251G05 (green) produced a large and small focus on the potato chromosome, suggesting a breakpoint in this BAC and a putative chromosomal rearrangement (Tang et al. 2008). (d) Cross-species FISH of potato BACs on the short arm of pachytene chromosome VI of potato (P) and tomato (T). (e) The comparative chromosomal positions of potato BACs on potato (P) and tomato (T) pachytene chromosome VI. Reproduced with permission of Genetics Society of America, Genetics Editorial Offi ce.

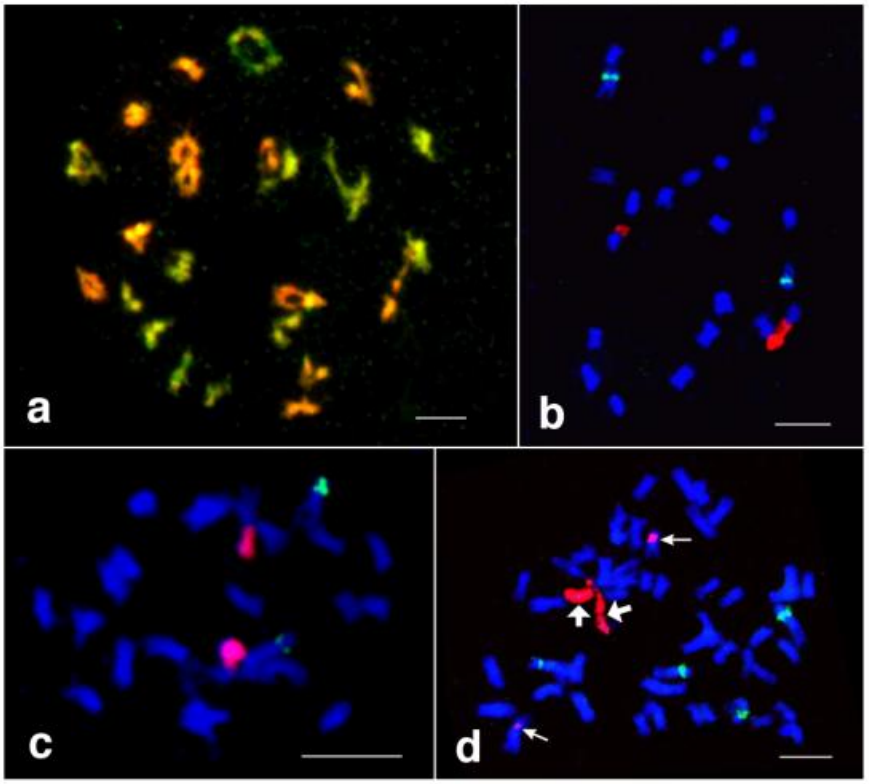

Figure 9-2 GISH analysis of series *Longipedicellata* tetraploid species *Solanum stoloniferum* (2*n* = 4*x* = 48) reprinted with permission from Pendinen et al. 2008. (a) Somatic chromosomes of *S. stoloniferum* probed with labeled DNA from its putative diploid (2*n* = 2*x* = 24) progenitor species - *S. verrucosum* (red) and *S. jamesii* (green). (b) GISH analysis of chromosomal pairing in diakinesis of *S. stoloniferum*. Pairing between *A* genome chromosomes (red, detected by labeled DNA of *S. verrucosum*) and *B* genome chromosomes (green, detected by labeled DNA of *S. jamesii*) were not observed.
(c-e) FISH mapping of 45S rDNA (red) and 5S rDNA (green) in (e) tetraploid *S. stoloniferum* and its putative diploid progenitor species (c) *S. verrucosum* and (d) *S. jamesii.* In *S. stoloniferum,* 45S rDNA hybridization sites were observed (large and small arrows). (f) Somatic chromosomes of *S. stoloniferum* probed with labeled genomic DNA from *S. verrucosum* (red) and *S. andreanum* (green). A large fragment (big arrows) and a small fragment (small arrows) from two pairs of *S. stoloniferum* chromosomes showed bright green color. Color differentiation was not observed on the rest of the chromosomes. (g) The same metaphase cell as in (f) was hybridized with 45S ribosomal RNA gene probe (red). The two large white arrows and two small yellow arrows FISH sites are not located on the chromosomes with color differentiation in GISH analysis. Scale bars = 5 μm.