



CHROMOSOME CONFERENCE

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RESTRICTION ENDONUCLEASE/NICK TRANSLATION PROCEDURE ON FIXED CHROMOSOMES OF THE AS (ATLANTIC SALMON) FISH CELL LINE

We have used a restriction endonuclease/nick translation (RE/NT) procedure to study the ability of restriction enzymes to cleavage DNA in fixed chromosomes of a fish cell line. This technique has proved to be very useful to reveal the chromatin heterogeneity underlying the chromosome structure that remains cryptic to other techniques also able to induce longitudinal differentiation on fish chromosomes. The differences observed in the banding patterns after nick translation procedure seem to be due, at least partially, to differences in activity among the enzymes assayed. The results obtained have also let to reveal some evidence about the origin and evolution of the marker chromosomes of the AS cell line.

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MOLECULAR APPROACHES TO THE STUDY OF MEIOSIS IN HIGHER PLANTS

Although the visible chromosomal changes that occur during meiosis have been studied for many years, little is known of the molecular control and coordination of this complex process. For plants, we have no information on the signal for transition from mitosis to meiosis, how progress through the stages is regulated, or the mechanisms for recombination. Two approaches to the study of events immediately prior to and during meiosis have been adopted; first, since many meiotic events are common to most Eucaryotes it is reasonable to assume that homologies will exist between meiotic genes in different organisms. We are thus exploiting the recent rapid progress on yeast meiosis by looking for plant protein homologues of the products of yeast meiosis specific genes - such as HOP1*. Secondly, in view of the fact that the origin of the male and female germ-lines, and the signal for meiotic initiation are probably specific to plants, we have constructed subtractive cDNA libraries from isolated meiocytes at individual developmental stages and selected, by differential screening, clones of genes expressed during prophase I. Anthers of *Lilium* have been used in this work in view of their high levels of synchrony and ease of extraction.

Results from each of these lines of research will be presented, including *in situ* data on a gene expressed early in meiotic prophase.

* N Hollingsworth, L Goetsh and B Byers. Cell 61:73-84. 1990