

539-S

PRIMATE CYTOGENETICS AND CELL GENETICS

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Molecular cytogenetic studies utilizing chromosome painting probes have brought about revealing the primate phylogenetic relationships and karyotypic evolution, however, there are still unknown genomic structures such as amplifying repetitive DNA sequences and retrotransposable compound repeat DNA organization (RCRO). In this symposium overview of the primate cytogenetics studies with historical aspects will be provided (by Prof. Roscoe Stanyon) and several new topics about RCRO and specific repetitive DNA sequences in macaques will be presented and discussed how and why those repetitive elements have been generated and distributed during the course of primate evolution. In addition, studies on the primate cell cultures and cell nuclear spatial analyses are indispensable for understanding the whole genome organization and primate genome evolution. In later part of this symposium several topics will be presented on the primate cell genetics, aging, spatial arrangement of chromosome territories by 3D-FISH analyses, and recent advancement of reproductive technologies on the marmoset ES cells and iPS cells. All those topics would shed new light on the field of research, primate cytogenetics and cell genetics.

Keywords: chromosome, FISH, repetitive sequence, ES and iPS cells