

Differential Inheritance Modes of DNA Methylation between Euchromatic and Heterochromatic DNA Sequences in Ageing Fetal Bovine Fibroblasts

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To elucidate overall changes in DNA methylation that occurs by inappropriate epigenetic control during ageing, we compared fetal bovine fibroblasts and their aged neomycin-resistant versions using bisulfite-PCR technology. Reduction in DNA methylation was observed in euchromatic repeats (18S-*rRNA/art2*) and promoter regions of single-copy genes (the cyokeratin/-lactoglobulin/interleukin-13 genes). Contrastingly, a stable maintenance of DNA methylation was revealed in various heterochromatic sequences (satellite I/II/alphoid and *Bov-B*). The differential inheritance modes of DNA methylation was confirmed through the analysis of individual neomycin-resistant clones. These global, multi-loci analyses provide evidence on the tendency of differential epigenetic modification between genomic DNA regions during ageing.

(Key words) Ageing, methylation, epigenetic modification, euchromatin, heterochromatin.