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Amplification of c-myc Locus is Independently Associated with the Deletions of Chromosome 8p in Breast Carcinoma

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ABSTRACT Attempts have been made in this study is to find out the mechanism of c-myc gene activation in breast carcinoma (CaBr) by analyzing alterations (rearrangement/amplification) in the ~580 Kb surroundings of this gene. The alteration in the c-myc locus was correlated with the deletions in chromosome (chr.) 8p to find if there is any association between the two phenomenons. The c-myc locus alteration was analyzed by Southern hybridization using the pal-1/ c-myc/ mlvi-4 probes. Overall, amplification in the c-myc locus was seen in 26% of the samples with 22% in the pal-1 region, 19% in the c-myc gene and 7% in the mlvi-4 region. This indicates that the c-myc gene activation may occur due to the amplification in the pal-1 region located 550 Kb 5' and mlvi-4 region located 20 Kb 3' of c-myc. About 42% of the samples showed loss of heterozygosity (LOH) in ³ 40% of the microsatellite markers tested. Atleast 21% of the samples showed co-alterations in both arms of chr.8. No significant association was observed between the amplification in the c-myc locus and deletions in chr.8p. Thus the deletions in chr.8p and the amplification in the c-myc locus are independently associated with the development of CaBr.

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