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Assessment Of A Putative Oncogene *ZNF217* In Colorectal Cancer By Multiplex Quantitative Real-Time PCR.

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Detection of gene amplification is a recognised process through which oncogenes can be identified. In this study the gene copy number of a putative oncogene, *ZNF217*, was assessed in 80 colon carcinomas (41 Dukes' B and 39 Dukes' C) by multiplex quantitative real-time PCR. *ZNF217* is mapped to chromosome 20q and lies within 20q13.2 a region which we have previously shown to be highly amplified in colorectal cancer by comparative genomic hybridisation. For each case DNA extracted from laser microdissected tumour cells was assessed by real-time PCR at two distinct gene loci, *ZNF217* and *Beta globin* (the internal control) on an ABI7700 sequence detection system. *ZNF217* gene copy number was calculated using the threshold cycle (C_t) at which PCR product was detectable for the *ZNF217* locus less the *Beta globin* locus' threshold cycle. The tumour values of C_t (*ZNF217 – Beta globin*) were compared to those of normal colon mucosa (n=10) and colorectal cancer cell lines (n=6) for which *ZNF217* copy number had been established using fluorescent *in situ* hybridisation. Of the 80 tumours assessed, 18 were diploid, 15 had loss of gene copy and 47 contained some level of amplification at the *ZNF217* locus. In this study we found that *ZNF217* amplification is a frequent event in colon cancer (47/80 tumours = 58.7%) and that the extent of its amplification varies markedly between tumours (range 3 - 13 copies).