

**27 CLONING OF A NEW GENE
THAT IS OVEREXPRESSED
IN LUNG CANCER CELL LINES**

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We cloned and sequenced a by product of a PCR reaction for prostate specific antigen (PSA) from a lung cancer cDNA. This had no homology to PSA and represented a novel 450 bp sequence.

Objectives: (a) To develop a PCR that would specifically amplify the sequence of interest (b) To determine the localization of this sequence on human DNA and (c) To examine whether this sequence was expressed in various cell lines.

Methods: A PCR method was developed in order to amplify this sequence. The PCR product was used as a probe to screen a PAC genomic library and to isolate a 100 kb clone that contained the sequence of interest. Fluorescence *in situ* hybridization was used to identify its localization and RT-PCR and Southern blotting were used to examine its expression pattern.

Results: The PAC containing the sequence of interest was subcloned into a plasmid vector and subclones were sequenced to construct a 5 kb region. The PAC clone was mapped on the long arm of chromosome 5 in region q12. Analysis of the 5 kb sequence revealed at least one open reading frame of about 300 bases. This sequence was found to be expressed in the lung carcinoma cell lines A-427, HT-173, NCI-H460 and SK-MES-1.

Conclusions: A novel nucleotide sequence was cloned from human lung tissue, which most likely represents a new gene that is overexpressed in lung cancer cell lines.