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Institution: Department of Urology, Niigata University, Faculty of Medicine.
Title: ANTISENSE NONMUSCLE-TYPE MYOSIN HEAVY CHAIN ISOFORM (SMemb)
SUPPRESS THE PROLIFERATION OF HUMAN PROSTATE STROMAL CELL.

Aims of Study:

The stromal cells of the prostate play a crucial role in the regulation of prostatic growth and function. The two main cell types residing in the stroma are fibroblasts and smooth muscle cells. Smooth muscle cell proliferation is a poorly understood process that play a critical role in several pathological states. SMemb is most abundantly expressed in proliferating smooth muscle cells and correlate to phenotypic modulation. The aim of this study was to investigate the expression of SMemb mRNA and the inhibitory effects of SMemb antisense phosphorothioate oligodeoxynucleotide (PODN) in proliferation of human prostate stromal cells.

Methods:

Human normal prostates were obtained from patients undergoing radical prostatectomy due to prostate cancer. Primary culture of prostate stromal cells were established by explant method from 5 normal prostates. The expression of SMemb mRNA was examined by RT-PCR. Cell proliferation was measured by MTT assay in stromal cells with antisense PODN or random PODN. Each experiment was carried out in six wells and the mean and standard deviation were calculated.

Results:

The SMemb transcripts were detected in stromal cell cultures. PCR products were sequenced. Treatment with 20 μ M of SMemb antisense PODN suppress the proliferation of stromal cells by 74% (SD 12%) compared to random PODN.

Conclusions:

These results suggested that SMemb antisense PODN might be a new modality in the treatment of benign prostatic hyperplasia.