
Thursday, July 24

Poster Session: 1:30pm-4:00pm Molecular Biology/Genetic Probes

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The Prostate Specific Antigen (PSA) Gene is Not Mutated in Either Breast Tumors or Breast Carcinoma Cell Lines. Majumdar, S., Diamandis, E.P., *Dept Path & Lab Med, Mount Sinai Hospital, Toronto, ON, Canada*

Prostate specific antigen (PSA) is an established tumor marker of prostatic adenocarcinoma. Recently, PSA was found to be present in normal, hyperplastic and cancerous breast tissues and in breast secretions [J Clin Endocrinol Metab 1995;80:1515-7]. The PSA gene in breast cancer appears to be regulated by the steroid hormone receptor (SHR). Since some SHR positive-tumors do not produce PSA and some SHR negative tumors produce large amounts of PSA, we postulated that this gene may harbour mutations during either tumor initiation or progression. In order to examine this, we first developed automated sequencing methods for the 5 exons of the PSA gene. After PCR amplification of each exon, we sequenced the PCR products using Sanger dideoxy termination with Thermosequenase and Cy-5-labeled sequencing primers on the Pharmacia ALF Express sequencer. DNA from 10 breast tumors and 4 breast carcinoma cell lines (T-47D, BT474, MCF-7, ZR-75-1) were sequenced as shown below. We found no mutations in the PSA coding sequence in any of the tumor or cell line DNA except for a polymorphism in exon 2 of three of the tumor DNAs. These data suggest that the PSA gene coding sequence is not mutated in breast cancer but we do not exclude the possibility of mutations within the 5'-promoter-enhancer region.

	Estrogen Receptor (fmol/mg)	Progesterone Receptor (fmol/mg)	PSA (ng/g)
1.	0	0	5248
2.	531	674	0
3.	3	5	7141
4.	112	0	9291
5.	634	0	348
6.	98	1230	0
7.	389	436	0
8.	0	0	1094
9.	410	374	0
10.	32	689	0