



ampli set **GSTP1** 24 tests (48 reactions)

cat 1410

detection of the hypermethylation state of promoter of gene Glutathione-S-transferase (GSTP1) in prostate cancer

The methylation of the residues of cytosine in the "CpG islands" is very important for the regulation of genic expression. The hypermethylation of the "CpG islands" in the promoter region of a gene suppress the transcription of the same gene. In many tumours the hypermethylation of the promoter of the suppressor genes, as p16, p15, E-cadherine and other genes as "DAP-kinase", inhibitor gene of the metastatic progression, O⁶-methylguanina DNA methyltransferase (MGMT), gene involved in the repair of DNA, Glutathione-S-transferase (GSTP1) involved in the prevention of the oxidative damage of DNA, etc has been showed.

Hypermethylation of "CpG islands", moreover, represents an useful therapeutic "target": the restoration of "silenced genes" might be possible via treatment with inhibitors of CpG methylation . The detection of the hypermethylation state of a gene can be an useful molecular biomarker for screening, early diagnosis and follow-up of neoplastic diseases .

The inactivation due to the hypermethylation of the gene encoding for the Glutathione-S-transferase (GSTP1) is a "bio-marker" for the human prostate cancer (PCA) Tumour cells contain CpG hypermethylated sequences in the regulatory region of the promoter. Because of the "gene-silencing" the level of the protein produced by the cells is very low These epigenetic changes occur very early in the development of the tumour, and the cells become vulnerable to oxidants and electrophiles.

The kit allows the detection of the methylation of the promoter of the GSTP1 gene

The principle of the assay is the extraction of genomic DNA from serum, or plasma or tissue, the treatment with bisulphite sodium in order to convert the unmethylate residue of cytosine in uracil, the PCR amplification with specific oligonucleotides for the methylate sequences and unmethylated sequences (MSP: methylation specific PCR) followed by the detection by electrophoresis on agarose gel.

Principle of assay

DNA extraction from :serum, tissue, urine, seminal liquid

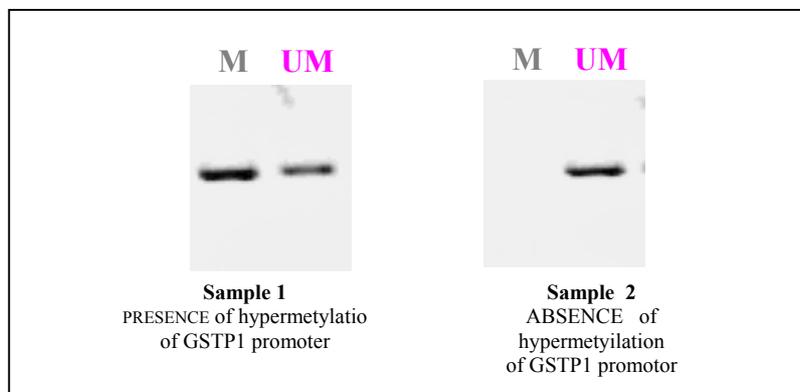
Modification :treatment with sodium bisulfite.

Amplification with specific primers for methylated and unmethylated sequences of the **GSTP1** promoter

Detection on agarose gel

Applicability

Serum ,tissue, urine ,seminal liquid



REFERENCES:

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- 4) *J. Biol. Chem.* (2000) 275, 24893-24899.