PROSTATE CANCER

Normal prostate epithelium

Proliferative inflammatory atrophy

Prostatic intraepithelial neoplasia

Localized prostate cancer

Metastatic prostate cancer

(Therapeutic decreased testosterone and dihydrotestosterone)

Androgen-independent cancer

Prostatic epithelial cell

Genetic alterations

Oncogenes : AR

Tumor suppressors : CDKN1B, NKX3.1, PTEN

Carcinogens

Hypermethylation

DNA

GSTP1

DNA

Genomic damage

PI3K-Akt signaling pathway

K09348

K01110

K06276

-p

+p

K04357...

K04361...

K00922...

PIP3

K04456

K04364

K03099

K02833...

K04365...

+p

K04368...

+p

K04371

Cytokine-cytokine receptor interaction

MAPK signaling pathway

Steroid hormone biosynthesis

Testosterone

K12344

Dihydrotestosterone

Other ligands

K08557

K04079...

?

K08557

K08557

Apoptosis

+p

K04399

K02158

Apoptosis inhibition

+p

K07201

+p

K06625

+p

K06624

Cell cycle progression

+p

K06643

+p

K03083

+p

K04467...

+p

K07203

Tumor growth

+p

K04374...

+p

K02105

K04734

K02580...

K06624

K02206

K06626

+p

K06618

K17454...

DNA

G1/S progression

Cell cycle

K04498

K04451

DNA

Impaired G1 and G2 arrest
Reduced apoptosis
Genomic instability

p53 signaling pathway

K02620...

DNA

K04503

Cell proliferation

DNA

K02161

Cell survival

K01351

DNA

Other target events

Cell proliferation
Survival

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