

## Department of Urology

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### General Summary

We performed both basic and clinical research in the following areas: oncology, involving such sites as the kidney, bladder, prostate and testes; anatomy, physiology, and pharmacology of the bladder and urethra; imaging and radiology; infections and inflammation of the genitourinary tract, such as interstitial cystitis and prostatitis; infertility; andrology and sexual function; lithiases; technology and instruments, such as laparoscopy; transplantation; and female urology.

### Research Activities

1. Basic research: We performed several studies to elucidate the biology of urological malignancies, the mechanisms of voiding, and the pathophysiology of interstitial cystitis. Most studies were presented at the annual meetings of the Japanese Urological Association and the American Urological Association. These projects are as follows:
  - 1) Tmprss2: ERG fusion in Japanese patients with prostate cancer
  - 2) Establishment and biological analysis of our new prostate cancer model, named JDCaP, derived from a Japanese patient
  - 3) Analysis of the mechanism of cross-sensitization between the colon and bladder via stimulation of the transient receptor potential cation channel ankyrin 1 receptor in the colon or bladder in rats
  - 4) Reduced expression of stem cell marker CD44v9 in urothelial basal cells in patients with interstitial cystitis/bladder pain syndrome
2. Clinical research: Several clinical studies are on going in our institution. The results of several studies have already been reported at the annual meetings of the Japanese Urological Association and the American Urological Association.
  - 1) Clinical study of high dose rate brachytherapy with external beam radiation therapy for high-risk prostate cancer
  - 2) Study of deep venous thrombosis after urological surgery
  - 3) Study of the incidence of latent prostate cancer
  - 4) Clinical study of nomograms for predicting unilateral pathological T3 prostate cancer
  - 5) Study of cryoablation therapy for patients with small renal tumors
  - 6) Urothelial dysfunction in patients with interstitial cystitis/bladder pain syndrome

## Publications

- Zlotta AR, Egawa S, Pushkar D, Govorov A, Kimura T, Kido M, Takahashi H, Kuk C, Kovylna M, Aldaoud N, Fleshner N, Finelli A, Klotz L, Sykes J, Lockwood G, van der Kwast TH.** Prevalence of prostate cancer on autopsy: cross-sectional study on unscreened Caucasian and Asian men. *J Natl Cancer Inst.* 2013; **105**: 1050-8.
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- Hatano T, Ishii G, Endo K, Kishimoto K, Egawa S.** Shrinkage of prostate volume in sunitinib-treated patients with renal cell carcinoma. *Jpn J Clin Oncol.* 2013; **43**: 1282-5.
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- Leinonen KA, Saramäki OR, Furusato B, Kimura T, Takahashi H, Egawa S, Suzuki H, Keiger K, Ho Hahm S, Isaacs WB, Tolonen TT, Stenman UH, Tammela TL, Nykter M, Bova GS, Visakorpi T.** Loss of PTEN is associated with aggressive behavior in ERG-positive prostate cancer. *Cancer Epidemiol Biomarkers Prev.* 2013; **22**: 2333-44.
- Hata K, Uno T, Tsuzuki S, Koike Y, Hatano T, Kishimoto K, Miyake R, Otani K, Egawa S.** Clinical studies of 20 cases of renal injury (in Japanese). *Hinyoki Geka.* 2013; **26**: 989-93.
- Kamata Y, Kuhara A, Iwamoto T, Hayashi K, Koido S, Kimura T, Egawa S, Homma S.** Identification of HLA class I-binding peptides derived from unique cancer-associated proteins by mass spectrometric analysis. *Anticancer Res.* 2013; **33**: 1853-9.