

## 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 projects to elucidate the biology of urological malignancies and to develop new therapeutic tools. The results of most projects were reported at the annual meeting of the Japanese Urological Association and the American Urological Association. The 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 transient receptor potential A1 involved in pelvic organ cross-sensitization in rats
- 4) Urinary continence mechanisms in rats
- 5) Common variants associated with prostate cancer susceptibility in Japanese men

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) Clinical study of 3-dimensional image construction of positive surgical margins in patients with prostate cancer
- 6) Study of cryoablation therapy for patients with small renal tumors
- 7) Reduced expression of stem cell marker CD44v9 in urothelial basal cells in patients with interstitial cystitis/bladder pain syndrome

## Publications

- Kimura T, Furusato B, Miki J, Yamamoto T, Hayashi N, Takahashi H, Kamata Y, van Leenders GJ, Visakorpi T, Egawa S.** Expression of ERG oncoprotein is associated with a less aggressive tumor phenotype in Japanese prostate cancer patients. *Pathol Int.* 2012; **62**: 742-8.
- Ishii G, Kimura T, Kuruma H, Egawa S.** New biomarkers for the prostate cancer (in Japanese). *Nihon Rinsho.* 2012; **70**: 828-32.
- Egawa S, Kimura T.** What is needed for improved patient care in upper urinary tract urothelial carcinoma? *Eur Urol.* 2012; **62**: 115-7.
- Furuta A, Suzuki Y, Hayashi N, Egawa S, Yoshimura N.** Transient receptor potential A1 receptor-mediated neural cross-talk and afferent sensitization induced by oxidative stress: implication for the pathogenesis of interstitial cystitis/bladder pain syndrome. *Int J Urol.* 2012; **19**: 429-36.
- Koike Y, Furuta A, Suzuki Y, Honda M, Naruoka T, Asano K, Egawa S, Yoshimura N.** Pathophysiology of urinary incontinence in murine models. *Int J Urol.* 2013; **20**: 64-71.
- Hatano T, Ishii G, Endo K, Mogami T, Sunakawa Y, Harada J, Kishimoto K, Egawa S.** Small cancer in solitary kidney: partial nephrectomy vs MRI-guided percutaneous cryoablation. *Teion Igaku.* 2012; **38**: 69-72.
- Akamatsu S, Takata R, Haiman CA, Takahashi A, Inoue T, Kubo M, Furihata M, Kamatani N, Inazawa J, Chen GK, Le Marchand L, Kolonel LN, Katoh T, Yamano Y, Yamakado M, Takahashi H, Yamada H, Egawa S, Fujioka T, Henderson BE, Habuchi T, Ogawa O, Nakamura Y, Nakagawa H.** Common variants at 11q12, 10q26 and 3p11.2 are associated with prostate cancer susceptibility in Japanese. *Nat Genet.* 2012; **44**: 426-9.