

IMSUT Hospital

Department of Urology

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Our department of Urology was established in ISMUT hospital on July 1st, 2020 to improve the occupancy rate by introducing advanced medical treatments such as robotic surgery. We successfully performed 1,241 cases of urological surgery including 181 cases of robotic surgery, which resulted in increase of the revenue. Further, we have been engaged in basic research on castration resistant prostate cancer to discover novel drugs by the method of molecular and cell biology.

1. Basic research

The canonical and non-canonical WNT signaling pathways regulate prostate cancer progression, but the precise mechanism by which this regulation occurs has yet to be established. We investigated the expression levels of WNTs in prostate cancer tissues and found that WNT5A is expressed at higher levels in cancer cells and in the stroma of non-cancerous regions than in prostate cancer epithelium of patient samples. WNT5A was also high expressed in prostate stroma-derived WPMY1 cells. WNT5A knockdown in WPMY1 cells resulted in reduced expression of cancer-related genes, and several cytokines according to microarray analysis. WNT5A expression was directly regulated by the ligand-inducible androgen receptor bound to the WNT5A promoter. Receptor tyrosine kinase-like orphan receptor 1 (ROR1), a WNT5A receptor, was highly expressed in prostate cancer cell lines and patients. shRNA-mediated ROR1 knockdown in PC3 cells abrogated WNT5A-induced cell proliferation. These results suggest that WNT5A in stromal cells regulates prostate cancer proliferation and invasion, at least in part, via the ROR1 signaling pathway. Our results suggest that cell-to-cell commu-

nication between stromal cells and prostate cancer cells enhances prostate cancer progression, and ROR1 may be a novel therapeutic target for prostate cancer.

2. Clinic

Since we established the department of Urology in IMSUT Hospital in July, 2020, the number of patients has been increased by introduced from urological clinics, hospitals, and other departments of our hospital. Totally 2,461 patients (266 new patients) visited our department in 2024 for the purpose of thorough examinations for diagnosis or surgical treatments.

We totally performed 335 surgical operations in 2025: 50 cases of Robotic-assisted prostatectomy, seven Robotic-assisted partial nephrectomy, one Laparoscopic nephroureterectomy or nephrectomy, four Radical cystectomy with ileal conduit urinary diversion or with cutaneous ureterostomy, 14 open surgery, 22 Trans-urethral resection of bladder tumor, three Trans-urethral resection of prostate, 33 Trans-urethral lithotripsy, seven Ureteroscopy, 52 Ureteral stenting, and nine Botox injection for overactive bladder

Publications

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4. Iimura Y, Kuroda S, Kaichi S, Yomoda K, Niimi F, Park MS, Takahashi S. A Literature Review and Management Approach for Severe Skin Toxicity Induced by Enfortumab Vedotin Through Sequential Adaptation and Combination With Immune Checkpoint Inhibitors. *Cureus.* 2025 Aug 9;17(8):e89678.
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8. Takahashi S*. Editorial Comment to Needlestick Injury During Urological Surgery: A 15-Year Review From a Multi-Institutional Study in the Chugoku-Shikoku Japan Urological Consortium. *Int J Urol.* 2025 Dec;32(12):1880-1881.