

## BLADDER CANCER

**LASP-1—a promising urine marker for detection of bladder cancer**

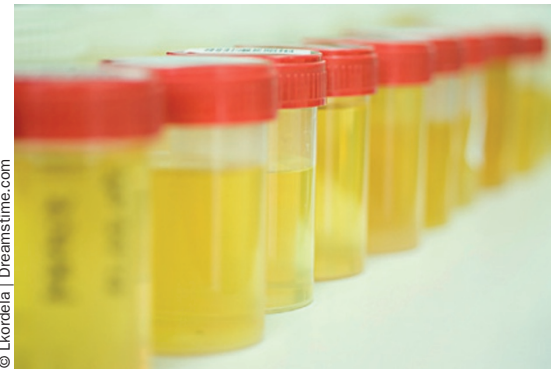
LASP-1 (LIM and SH3 domain protein 1) is a focal adhesion protein that has previously been linked to cancers of the colon, ovary and breast. Now, in a study published in *Urologic Oncology*, a research team led by Peter Ardelt at the University of Freiburg reports that LASP-1 is a potential urinary marker for the detection of bladder cancer.

Urine markers for bladder cancer are much sought-after; detection is currently based largely on cystoscopy, which, although being the gold standard, can be expensive and invasive, and is associated with pain and infection. Ardelt told *Nature Reviews Urology* that his patients often ask if there are any alternatives. “Frustratingly, there has been little progress in the last few years,” he says. “New markers emerge regularly, but fail to make it to clinical utilization.”

Ardelt and colleagues investigated the role of LASP-1 in transitional cell carcinoma (TCC), the most common type

of bladder cancer. They found that LASP-1 expression was moderately elevated in tissue specimens from 72 patients with TCC, and that measuring urinary levels of LASP-1 could predict the presence of TCC with high sensitivity. Researchers analyzed LASP-1 expression in urine sediments from 84 patients who were undergoing either cystectomy for confirmed muscle-invasive TCC or transurethral resection for a suspected bladder tumor. When the cut-off for discriminating between malignant and nonmalignant samples was set to 1 ng per 500  $\mu$ l of urine, the sensitivity was found to be 83.1% and specificity was 85.3%—both of which are higher than for the commercially available markers NMP22, UroVysion® and ImmunoCyt™. Moreover, the positive and negative predictive values of LASP-1 were 83.1% and 80.6%, respectively.

Notably, false-positive results were reported in the presence of hematuria



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(>200 erythrocytes/ $\mu$ l urine) and leukocyte contamination, suggesting that these should be exclusion criteria for the use of LASP-1.

“A large trial with multifactorial analysis is currently underway,” says Ardelt. “We hope the limiting influence of hematuria and infection might be reduced in the future.”

*Sarah Payton*

**Original article** Ardelt, P. et al. LASP-1, a novel urinary marker for detection of bladder cancer. *Urol. Oncol.* doi:10.1016/j.urolonc.2012.02.002