

PRESS RELEASE  
European Association of Urology (EAU)  
28th Annual EAU Congress  
Under embargo until 15 March 2013

**New study on UTIs suggests flagellin is key in stimulating body’s natural defences**

Arnhem, 11 March 2013- A new study by British scientists reveals that motile Escherichia coli isolates demonstrated significant activation of NF-κB signaling suggesting that flagellin plays a key role in up-regulating the host innate defences against urinary tract infections (UTIs).

UTIs are commonly caused by Escherichia coli. The host innate defences function to protect the uro-epithelium from microbial assault via a variety of mechanisms. These include NF-κB signalling pathways activated via cell-surface Toll-like-receptors responding to bacterial pathogen associated molecular patterns (PAMPs). Flagellin, a protein responsible for bacterial motility, is a key activating PAMP.

The study, conducted by a multidisciplinary team of researchers at Newcastle University in the UK, investigated the motility of 24 clinical isolates associated with UTIs and their ability to activate NF-kB. The scientists aimed to examine the relationship between flagellin expression and host response.

“Research into the causes and treatment of urinary tract infection (UTI) is vital at this time as the incidence of UTI and bacteriuria are increasing with an aging population,” commented Mr. Ased Ali of Newcastle University’s Institute of Cellular Medicine and the study’s presenting author.

“There is rapidly growing resistance exhibited by organisms, especially E. coli, to conventional antimicrobials which makes infections potentially more and more difficult to treat,” he explained. “This is confounded by the fact that there have been no new classes of antibiotics to treat Gram-negative bacilli like E. coli for more than 40 years. It is amazing that the fluoroquinolones were the last new class of antibiotics to treat Gram-negative bacilli! Our ultimate aim is to develop agents that enhance the immune response and help the body defend itself better as an alternative to conventional antibiotics which work against the pathogen alone.”

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**Notes to editors**

**About urinary tract infections**

Urinary tract infections (UTIs) are very common and may affect all groups of populations. Elderly people and women are somewhat more likely to have urinary tract infections. While UTIs generally respond well to antibiotic treatment, scientists today express concern about the growing incidence of infections resistant to antibiotics and currently much research is being done in this field.

**About the European Association of Urology**

The EAU represents the leading authority within Europe on urological practice, research and education. Over 16,000 medical professionals have joined its ranks and help to create forward-looking solutions for continuous improvement, professional growth and knowledge sharing. The EAU delivers training, stimulates research and broadcasts information. The EAU’s scientific publications encourage discussion and its expert recommendations guide urologists in their every-day practice.

**Reference**

A.S.M. Ali et al., “*Bacterial motility and NF-κB activation by clinical isolates from urinary tract infections*,” First Prize, Best Abstract (Non-Oncology), 28th Annual EAU Congress, 15 to 19 March 2013; Milan, Italy; Abstract Nr: 623.