

**Publication****A Flow Cytometry-based Assay for Screening FimH Antagonists****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 765881**Author(s)** Scharenberg, Meike; Abgottspon, Daniela; Cicek, Evelin; Jiang, Xiaohua; Schwardt, Oliver; Rabbani, Said; Ernst, Beat**Author(s) at UniBasel** [Ernst, Beat](#) ; [Scharenberg, Meike](#) ; [Abgottspon, Daniela](#) ; [Jiang, Xiaohua](#) ; [Schwardt, Oliver](#) ; [Rabbani, Said](#) ;**Year** 2011**Title** A Flow Cytometry-based Assay for Screening FimH Antagonists**Journal** Assay and Drug Development Technologies**Volume** 9**Number** 5**Pages / Article-Number** 455-464

Urinary tract infections (UTIs), including cystitis and pyelonephritis, affect a large proportion of the population and account for significant medical costs. In more than 80% of UTIs, uropathogenic *Escherichia coli* (UPEC) is the causative pathogen. The initial step in the pathogenesis of the infection is the adherence of UPEC to the human bladder epithelium, enabling the invasion into the host cells and the development of UTIs. This process is mediated by the lectin FimH located on type I pili and enables UPECs to attach to oligomannosides of the glycoprotein uroplakin Ia presented on uroepithelial cells. FimH antagonists such as alpha-D-mannopyranosides have been shown to interfere with the attachment of UPEC to their host cells, thus providing a novel therapeutic opportunity for the treatment and prevention of UTIs. In this article, we report a flow cytometry-based assay to evaluate the potential of FimH antagonists for the prevention of the infection of the human urinary bladder cell line 5637 by UPEC strain UTI89. The assay was optimized and validated, and the inhibitory potency of different alpha-D-mannopyranosides was determined. Finally, the IC50 values measured by the flow cytometry-based assay were compared with those reported for other assay formats.

**Publisher** Mary Ann Liebert**ISSN/ISBN** 1540-658X ; 1557-8127**edoc-URL** <http://edoc.unibas.ch/dok/A6001506>**Full Text on edoc** No;**Digital Object Identifier DOI** 10.1089/adt.2010.0357**ISI-Number** WOS:000295324500002**Document type (ISI)** Article