



Technology Offer

University of Oulu, Finland (ref. OU14023)



## Antimicrobial peptides

### Background

Among drug compounds, antibiotics have had a tremendous impact on the life expectancy of humankind. However, the capacity of microbes to develop resistance is almost unlimited. Hospital acquire infections are major cause of death due to antimicrobial drug resistance in bacteria.

The invasion of microorganisms within the urinary tract is termed Urinary Tract Infection (UTI). UTI is the most prevalent hospital-acquired infection with an estimated infection rate of 25-40% in women, and considering the full lifetime, 40-60% of women can get one or more UTIs. In hospital-acquired UTIs (CAUTI), catheters are carriers of infection in majority of the cases. CAUTIs are caused by several bacterial species, *Escherichia coli* and *Klebsiella pneumoniae* being the recurrent casual organisms. Antibiotics effective against gram negative bacteria, such as *E. coli* are proven as relevant targets for prevention and treatment of UTI.

### Contact

Maarit Jokela, PhD  
Innovation Manager

Innovation Services  
University of Oulu  
P.O.Box 4300  
FI-90014 University of Oulu  
Finland

Tel. +358 40 355 9660

[maarit.jokela@oulu.fi](mailto:maarit.jokela@oulu.fi)

[www.oulu.fi](http://www.oulu.fi)

### Invention

Novel antibiotic peptides were identified using metagenomic microbiome. They were rationally designed and optimized for thermo, pH & salt tolerance and were synthesized and tested against various clinical strains. We have developed potential peptide antibiotics that are active against various clinical strains of *E. coli*, *K. pneumoniae*, *E. cloacae*, *P. aeruginosa*, *S. pneumoniae*, *Acinetobacter baumannii*, *A. johnsonii*, *S. aureus*, *Candida albicans*, *C. glabrata*, *C. parapsilosis* and *C. quillermondiae*.

### Field:

- Biological/medical science
- Medical devices

## Status

TRL level: TRL 4

- Tested with various clinical microbial strains

## Patent:

Pending:

WO2017001730,

WO2017001731,

WO2017001732

## Principal Scientist

Dr. Tejesvi Mysore

([Mysore.Tejasvi@oulu.fi](mailto:Mysore.Tejasvi@oulu.fi) /

[mvtejesvi@gmail.com](mailto:mvtejesvi@gmail.com))

## Applications

- Antimicrobial coating of various medical devices
- Topical antimicrobial creams
- Wound care/treatment

## Benefits

- Broad spectrum antimicrobial activity
- High efficacy
- Target selectivity
- Not known to develop resistance in bacteria
- Prevents / reduces hospital acquired infections by using antimicrobial coated medical devices

## Technology Offer

- Available for licensing

