University of Gdańsk
Technology Transfer Office

chemistry

New vancomycin conjugates in antimicrobial treatment

About technology

The proposed technology is a novel conjugate of vancomycin (Van) and transportan 10 (TP10) and its **antimicrobial application**.
Vancomycin is an antibiotic with antimicrobial activity against Gram(+) aerobic and anaerobic bacteria. It is often used to treat infections caused by bacteria such as Staphylococcus aureus, Enterococcus spp. and Clostridium difficile. These infections often occur in people after a long hospital stay, chronic illness and a long period of antibiotic use.

Infections located in brain tissue such as bacterial meningitis are particularly dangerous. The efficacy of vancomycin is insufficient due to the increasing number of multidrug-resistant strains of nosocomial bacteria.

A team of researchers from UG and GUMed has invented an **antibiotic with improved antibacterial efficacy** and that **penetrates brain tissue well**. These properties were achieved by conjugating vancomycin with transportan 10 (TP10), which has antimicrobial activity and the ability to transport drugs into the cell.

Creation of **Van-TP10** conjugates:
- improved **pharmacokinetic and pharmacodynamic properties** compared to vancomycin alone,
- while maintaining **low cellular toxicity**.

Van-TP10 conjugates show improved antimicrobial effects and low levels of toxicity against clinical strains of methylcilin-resistant Staphylococcus aureus (MRSA). The new conjugates may prove helpful in **the treatment of life-threatening infections**, especially those **located in the brain**, and could therefore be used as drugs in the pharmaceutical industry as an alternative to **traditional vancomycin**.

Research Team

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IP Protection

The invention is the subject of patent protection:
- Poland: **Pat.242410**

Implementation progress

TRL 4 –Technology validated in laboratory conditions

Cooperation opportunities

- Licensing agreement
- Transfer of ownership
- Partnership for further research

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