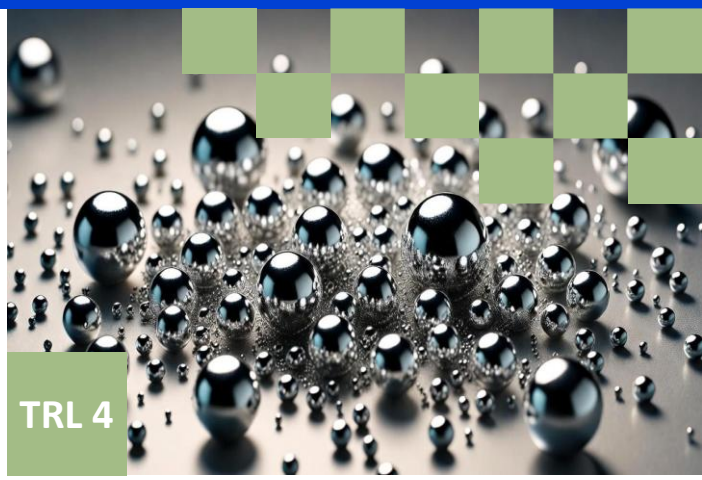
Bio-tech

Innovative antibacterial agent based on plumbagin and silver



TRL 4

About the solution

The invention concerns a method for deactivating antibiotics in aqueous solutions using direct current atmospheric pressure glow discharge (dc-APGD).

This technology enables efficient degradation of antibiotics such as ampicillin, penicillin G, and chloramphenicol in a continuous, energy-efficient process without the need for plasma-forming gases.

The process eliminates the antibacterial activity of antibiotics, reducing the spread of antibiotic resistance in the environment.

The flow-through system can be integrated with wastewater treatment facilities in medical, pharmaceutical, and agricultural sectors, minimizing operational costs and ecological risks.

IP Protection

The invention is protected by the Polish Patent Office under the following number: **Pat.245203**

Technology readiness level

TRL 4 - Technology validated in laboratory conditions.

Research Team

University of Gdańsk
Prof. Aleksandra Królicka
PhD Aleksandra Bielicka-Giełdoń
PhD Marta Krychowiak-Maśnicka

Applications

- Dermatological and antiseptic preparations for wound and burn treatment,
- Ingredient of antibacterial creams and ointments,
- Supportive agent in therapies of antibiotic-resistant infections.

Cooperation opportunities

- Collaboration in preclinical testing and formulation development,
- Licensing of the technology and joint product development,
- Partnership with pharmaceutical and biotechnology industries.

biuro@ctt.ug.edu.pl
ul. Wita Stwosza 63,
80-308 Gdańsk
www.ctt.ug.edu.pl

Judyta Gawryś
+48 725 991 257