



Aalborg University - Problem based learning students antimicrobial testing

Bactericidal and potential impact on multi-resistance bacterial by Halophyte Bioactive Extracts.

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Bioactive compounds for medical applications such as novel natural antibiotics and anti-inflammatory agents could be of rising value in green circular economics in order to solve future world health challenges. The increasing bacterial resistance to antibiotics has developed due to different factors such as overconsumption of antibiotics against bacterial and nonbacterial infections and unregulated use hereof. The AQUA-COMBINE project is a new business model endeavoring the implementation of continual use of resources and elimination of waste through prevention, reduction, and recycling. Halophyte extracts are known to have an antimicrobial effect on different bacterial strains. To investigate the putative antimicrobial effect of plant extract from *Salicornia Europaea* the proliferation rates of multiple clinical important bacteria including *Klebsiella Pneumoniae* species, *Escherichia Coli*, and *Staphylococcus Aureus* strains were investigated in relation to discover alternative treatment options in order to control rising antibiotic resistance. *Klebsiella Pneumoniae* species, *Escherichia Coli*, and *Staphylococcus Aureus* strains were exposed to diluted extract from *Salicornia Europaea* and the effect was measured using both time dependent test and agar well diffusion method. A sensitivity test using gentamicin and kanamycin was performed as a positive control to the agar well diffusion method. Preliminary results indicate a growth inhibitory effect and experiments are pending for investigating antibiotic resistance relevant parameters.



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