Identification of plant extracts with antimicrobial activity against drug-resistant bacteria. Kéren Lubembo and Joseph Horzempa. Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV

Methicillin-resistant Staphylococcus aureus (MRSA) is a drug-resistant opportunistic pathogen that can cause serious infections which may lead to sepsis and even death. We previously identified extracts from 10 plants that exhibited antimicrobial activity toward Pseudomonas aeruginosa – another drug-resistant opportunistic pathogen. The goal of this study was to determine if any of these extracts also exhibited antimicrobial activity against MRSA. Here we used a disk diffusion assays to measure antibiotic sensitivity. Of the ten extracts tested, only extracts of Agrimonia gryposepala (tall hairy agrimony) produced measureable zones of inhibition. Vancomycin was used as a positive control and produced robust zones of inhibition (as this antibiotic is known to have antimicrobial activity against MRSA; the negative control [vehicle, ethanol] did not produce zones of inhibition). These data suggest that A. gryposepala extracts may contain a compound that could have broad applicability toward drug-resistant bacteria whereas all other extracts tested exhibited a narrower spectrum of activity. (Supported by NIH Grant P20GM103434 to the West Virginia IDeA Network for Biomedical Research Excellence)