

Antimicrobial Activity of Tea Polyphenols Against some Clinically Important Pathogens

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Infections caused by methicillin-resistant *Staphylococcus aureus* (MRSA) in hospitals continue to be a serious problem worldwide. Most of the MRSA infections in community hospitals are closely linked with other opportunistic pathogens. *Candida albicans*, which causes candidiasis, may readily multiply and overgrow in immunosuppressed patients, diabetics and pregnant women. *Pseudomonas aeruginosa*, an effective opportunistic pathogen, can cause pneumonia, urinary tract infection and surgical site infection with some alteration of normal host defenses. The enterococci bacteria cause urinary infections, intra-abdominal and pelvic abscesses, post-surgery wound infections, bacteremia, and neonatal infections.

The tea plant (*Camellia sinensis*) is a potential source of antimicrobials. Polyphenols, the major chemical type of water-soluble compounds present in tea, are known to be responsible for the medicinal properties of tea. The objectives in the present study were, to isolate polyphenols from tea flush, mature tea leaves and low quality green tea, and to assay the antimicrobial properties of tea polyphenols against MRSA, *Candida* species, *P. aeruginosa* and enterococci.

Polyphenols were isolated as crude catechin mixtures (CCMs) from tea flush, mature tea leaves, green tea and green tea dust using solvent fractionation methods. Epigallocatechin gallate (EGCg) and some minor catechins were separated from the CCM by using high speed counter current chromatography techniques. CCM and EGCg were screened for antibacterial activity against MRSA (100 strains) and MSSA (20 strains). CCM and EGCg showed considerable activity. Five species of *Candida* isolated from hospital isolates also showed considerable sensitivity to catechins. *P. aeruginosa* and enterococci were, however, less sensitive.

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