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P463 Antimicrobial activities of Longan (*Euphoria longan* L.) skin and seeds

Thongmuang P[1], Sudjaroen Y[1], Owen R[2]
[1]Suan Sunandha Rajabhat University, Aesthetic Health Science, Faculty of Science and Technology, 1 U-Thong Nok Road, Wachira, Dusit Bangkok, Thailand; [2]German Cancer Research Center, Division of Toxicology and Cancer Risk Factors, Im Neuenheimer Feld 280, 69120 Heidelberg, Germany

The methanolic extracts from seeds and skin of Longan (*Euphoria longan* L.) were tested for antimicrobial activity with five strains of pathogenic bacteria including *Staphylococcus aureus, Bacillus cereus, Psuedomonas aeruginosa, Enterococcus faecalis, Escherichia coli* and one strain of pathogenic yeast, *Candida albicans*. The antimicrobial activities of each extract were screened by agar diffusion before conducting with broth macrodilution methods for determining minimal inhibitory concentration (MIC) [1]. The phenolic content of skin and seed extracts was evaluated by analytical high performance liquid chromatography (HPLC) [2]. The results show that the methanolic extract of Longan skin (10 mg/ml) inhibited growth of *S. aureus, P. aeruginosa* and *C. albicans* were 15, 11 and 9 mm of inhibition zone and MIC values were 4.42, 8.84 and 1.11 mg/ml, respectively. The inhibition zones of Longan seed extract (10 mg/ml) were 17, 12 and 11 mm and MIC values were 3.19, 1.59 and 1.59 mg/ml for *S. aureus, P. aeruginosa,* and *C. albicans*, respectively. The phenolic content of skin and seed extracts were 13.38 and 88.51 g/kg of dry weight. It was concluded that the antimicrobial activity was not related to content of phenolic compounds. However, it may be due to types of phenolic compounds presented in the extracts and solubility of extracts [3, 4]. **Acknowledgements:** 1, Faculty of Science and Faculty of Medical Technology, Rangsit University, Phaholyothin Road, Lakhok, Pathumthani 12000, Thailand. 2, Associate Professor Omboon Luanratana, head of Department of Pharmacognosy, Faculty of Pharmacy, Mahidol University, Sri-Ayuthaya Road, Rajathevi, Bangkok 10400, Thailand. **References:** 1. NCCLS. (1998) Performance standards for Antimicrobial Susceptibility testing: Fifth Informational Supplement M100-S8 18 (1). National Committee for Clinical Laboratory Standards. 2. Owen RW et al. (2000) Eur J Cancer 36: 1235 – 1247. 3. Cowan, MM. (1999) Clin Microbiol Rev 12: 564 – 582. 4. Cushnie, TPT. et. al. (2003) Microbiol Res. 158: 281 – 289.

P464 Protein fraction from *Syzygium cumini* L. (Skeels) seeds active against bacteria isolated from bovine mastitis

Valle A[1], Guimarães G[1], Lazzari A[1], Blume H[1], Mulinari F[1], Melo RF[2]
[1]UPIS – Brasília, Veterinary Medicine, Fazenda Lagoa Bonita, Planaltina, DF, 70000 Brasília, Brazil; [2]UPIS – Brasília, Veterinary Medicine, Fazenda Lagoa Bonita, Planaltina, 70000 Brasília, Brazil

Mastitis, an inflammation of the mammary gland, is the costliest production disease of dairy cattle around the world. The treatment is based on antibiotic therapy, but the therapeutic efficacies of the drugs are decreasing due to the development of antimicrobial resistance. Aiming to evaluated the potential use of herbal compounds on infections of mammary glands, the in vitro activity of *Syzygium cumini* L. (Skeels) seeds protein fraction was tested against different isolated bacteria from bovine mastitis (*Staphylococcus aureus, Staphylococcus intermedius, coagulase-negative Staphylococcus, Staphylococcus hyicus, Streptococcus uberis, α-hemolytic Streptococcus, Streptococcus dysgalactiae, Streptococcus bovis and Enterococcus faecalis*). The tests were carried using protein fraction obtained by sulfate ammonium precipitation, dialysis and lyophilization. The agar diffusion method was used and this fraction showed activity against *S. uberis*, with an inhibition halo of 12 mm, α-hemolytic *Streptococcus* (10,5 mm), *S. intermedius* (15 mm), coagulase-negative *Staphylococcus* (16 mm) and *S. aureus* (18 mm). These results showed that the *S. cumini* seeds protein fraction could represent an interesting alternative method for mastitis control. The formulations based on this natural product will be tested, aiming to development an alternative treatment for antibiotic therapy, with reduced costs and risk of residues on milk.

P465 Antimicrobial activity of *Limonium avei* (De Not.) Brullo & Erben extracts

Filocamo A[1], Nostro A[1], Giovannini A[2], Catania S[3], Costa C[3], Marino A[1], Bisignano G[1]
[1]Pharmaco-Biological Department, School of Pharmacy, University of Messina, Pharmaco-Biological Department, School of Pharmacy, Vill. Annunziata, 98168 Messina, Italy; [2]C.R.A. Experimental Unit for Floricolture and Ornamental Species, Corso Inglesi, 508, 18038 Sanremo (IM), Italy; [3]Interdepartmental Centre of Experimental, Environmental and Occupational Toxicology (CITSAL), Via C. Valeria, 98122 Messina, Italy

Limonium avei (De Not.) Brullo & Erben (Plumbaginaceae) is a rare triploid (2n = 27), annual halophyte, with apomictic reproduction [1], included in the Red List of Endangered Species by the IUCN [2]. The species is endemic to the central Mediterranean coast and in Liguria (Italy) it is present in only one population, with almost 1500 individuals. The increasing urbanization of the Ligurian population natural habitat has prompted the adoption of measures for its conservation. As part of this effort ex situ seed conservation and tissue culture techniques were developed for the species [3]. To the best of our knowledge, no study reporting to biological activity is present in literature. Here we reported for the first time the antimicrobial activity and phytochemical profile of *Limonium avei* ethanol and dichloromethane extracts. Flowering stems collected in the natural site were compared with flowering stems collected in the CRA-FSO greenhouse from micropropagated acclimatised plants. Tissues were air dry at room temperature for 60 days. The antimicrobial activity of extracts was performed by the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) [4] against Gram-positive, Gram-negative bacteria and mycetes. The extracts were submitted to phytochemical screening by LCMS and HPLC/DAD analyses. The results indicated that the ethanol extracts of both samples displayed higher activity than dichloromethane extracts and this activity was more pronounced against Gram-positive than Gram-negative bacteria and mycetes. In particular, the extracts demonstrated MIC and MBC values ranging from 15.6 to 500 µg/ml and from 500 to 4000 µg/ml respectively. **References:** 1. Brullo S. (1988). Miscellaneous notes on the genus Limonium. Willdenowia 17(1): 17. 2. Conti F. et al. (1997). Liste Rosse Regionali delle Piante d'Italia. WWF & SBI, Camerino: 64. 3. Giovannini A. et al. (2009). Ex situ conservation measures of a threatened Limonium avei (De Not.) Brullo & Erben population. In Book of Abstract "Biodiversity Hotspots in the Mediterranean Area" Cagliari 22 – 24 giugno: 284. 4. CLSI (2000). Methods for dilution antimicrobial susceptibility tests for bacteria that grow aerobically:approved standard, Wayne, Pa 17: 10 – 13.

P466 *In vitro* antimicrobial activity screenning of *Terminalia macroptera* leaf

Silva O[1], da Silva G[1], Taniça M[1], Serrano R[1], Vital J[2], Teixeira Gomes E[1]
[1]iMed. UL, Faculty of Pharmacy, University of Lisbon, Laboratory of Pharmacognosy, Av. Prof. Gama Pinto, 1649 – 019 Lisbon, Portugal; [2]Faculty of Pharmacy, University of Lisbon, Laboratory of Microbiology, Av. Prof. Gama Pinto, 1649 – 019 Lisbon, Portugal

Terminalia macroptera Guill. and Perr. (Combretaceae) is a West African species used on traditional medicine to treat infectious diseases.[1] Hereby we present the results of an antimicrobial activity screening performed by the twofold serial microdilution assay against seven reference bacterial strains and against *Candida albicans*, with a leaf hydroethanol extract (Tml) and liquid-liquid partition fractions Tml-1 (hexane), Tml-2 (diethyl ether), Tml-3 (ethyl acetate), Tml-4 (Tml water filtered fraction) and Tml-5 (Tml water precipitate fraction). Results are displayed on Table 1. In the range of tested concentrations (3200 to 50 µg/ml), the extract was active against all tested microorganisms. The best results were obtained against *Shigella dysenteriae* and *Vibrio cholerae* and the most active fraction was identified as the ethyl acetate one (Tml-3). Chemical profile of this fraction includes polyphenols as main compounds.