

## Abstract

As a contribution towards search of alternative medicine against emerging resistant pathogenic strains, this study aimed at exploring the antimicrobial activity and identification of the potential bioactive compounds in the commonly used medicinal mushroom (*Pycnoporus sanguineus*). To achieve this target, the fractions were obtained from methanol and petroleum ether crude extracts and tested in vitro for antimicrobial activities against selected bacterial strains and fungi. The bioactive compounds were identified by GC-MS. Gram positive bacteria were more sensitive to than the gram negative ones. Similarly, methanol fractions had high activity than petroleum ether. Isolated fractions had a MIC value ranging between 12.5  $\mu\text{g mL}^{-1}$  to  $>200 \mu\text{g mL}^{-1}$  for bacteria and 12.5-100  $\mu\text{g mL}^{-1}$  for a fungus. Interestingly, *Pseudomonas aeruginosa* and the multidrug resistant strains of *Staphylococcus aureus*, MD were also sensitive to these fractions as observed by the zones of inhibition. Several bioactive compounds were identified including aliphatic compounds, naphthalene, 2-pentanone, 4-hydroxy-4-methyl- and fatty acids among others. This diversity highlights this mushroom as a good candidate for prospecting for novel bioactive compounds against many emerging multi-resistant strains, particularly those of *S. aureus* and *P. aeruginosa*. Furthermore, the presence of high content of aliphatic hydrocarbons and naphthalene puts this mushroom species on the “myco-diesel” map and a favorable candidate for potent insecticides search, respectively.