Phytochemical analysis and biological activities of active fractions of Gum Arabic (Acacia senegal)

Srinivasa Rao Sirasanagandla[1], Isehaq Al-Huseini[2], Jamal Al-Sabahi[3]

[1]Department of Human and Clinical Anatomy, College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman

[2]Department of Physiology, College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman.

[3]Central Instrumentation Laboratory, College of Agricultural and Marine Sciences, Sultan Qaboos University, Muscat, Oman.

ABSTRACT

The present study aimed to extract the active fractions of gum Arabic (GA) from its powder and explore the in vitro antioxidant activity and anti-microbial activity of these fractions. The GA sample's mixture was fractionated using different solvent starting from the lowest polarity to the highest. Four fraction was isolated from the methanal dissolved sample (Hexane, Dichloromethane (DCM), Ethyl Acetate and Aqueous). After freeze drying, a yield of the sample was as the followed: hexane: 0.6g, DCM: 7.9g, Ethyl acetate: 14.1g and aqueous: 477.4g. The biological activities of these fractions were tested using in vitro total antioxidant activity and DPPH assays. The results of these two assays showed that all the fractions possess anti-oxidant activities highest being in aqueous or water extract followed by other fractions. Additionally, the present study revealed that aqueous and hexane fractions are effective against the three microorganisms including *Staphylococcus aureus* and *Escherichia coli* and *Pseudomonas aeruginosa.* microorganisms. The findings of the study showed that these fractions possess potential anti-microbial activities. Further analysis for isolation of active compounds in these fractions is warranted.

DOI: 10.21467/abstracts.8.6 ISBN: 978-81-998984-0-0 (eBook)