

## ABSTRACT

*Acacia Arabica* is a medicinal plant found in all over the Pakistan. Its bark is frequently used for the treatment of diseases like cold, bronchitis, skin diseases, diarrhea, toothache, small pox, biliousness, leucoderma and seminal weakness. The bark powder (*Acacia Arabica*) was used for the extraction of active constituents in ethanol, methanol, water and hexane. The present research work consist of two parts, in part (A) hexane extract was analyzed by GC-MS spectrometer. Ten compounds were detected by comparing spectrum with GC-MS spectrum of known compounds in the library. Oleic acid was present in highest concentration. Biologically it is very important and it has been proved that it inhibit very well *S. aureus* and *E. coli*. It is safe as an antimicrobial agent and is not toxic for human. Other compounds detected in hexane extract were heptacosane, tetratetracontane, 17-methylpenta decanoic acid, methyl 1,2,3, propantriyl docosanic acid, estra-1,3,5-(10)-triene-17  $\beta$ -ol, 10-octadecanoic acid methy ester, 9,10-octadecadienoic acid methyl ester, 7,10,13-eicosatrienoic methyl ester. All these compounds have antimicrobial properties.

In part (B), Ethanol, methanol, water and hexane extracts were used for the Antimicrobial study by using well diffusion method and broth macrodilution method. Microorganism used for antimicrobial study were *bacillus subtilis*, *staph. aureus*, *E.coli*, *salmonella typhi* and *Asp. niger* (fungi ). Hexane and ethanolic extracts showed highest activity against microorganism tested. Aqueous extract showed poor results against all microorganisms while methanol extract showed intermediate results. All the extracts showed very poor results against *Aspergillus niger* (fungi). *Acacia Arabica* can be act as natural, easily available source of antimicrobial agent. Further work with modern techniques is require to completely understand the hidden aspects of *Acacia Arabica*.