J Biotechnol Biomater 2017, 7:1(Suppl)
http://dx.doi.org/10.4172/2155-952X.C1.071

Quantitative RP-UPLC analysis of quercetin in three *Grewia tenax* phenotypes

Hussien M Daffalla[1], S G Musharraf[2], M Iqbal Choudhary[2], Mutasim M Khalfala[3] and **Hiba A Ali[1]**
[1]National Centre for Research, Sudan
[2]University of Karachi, Pakistan
[3]Umm AL-Qura University, Saudi Arabia

Grewia tenax (Forssk.) Fiori. (*Malvaceae*) is commonly found in Africa, Asia and Australia. It has been used traditionally to treat various diseases. The extracts from various plants, which are expected to be safe, exhibited various biological effects, e.g., anti-oxidant, antibacterial, hepatoprotective, anti-inflammatory, anti-emetic, anti-malarial, analgesic, and anti-pyretic activities. Such effects might be attributed to the flavonoidal content of the species, e.g., quercetin. A total of 25 accessions of *G. tenax* were selected for this study from trees grown within the same geographical area. Seven morphological traits were measured for each accession. Three phenotypes were identified according to their distinct variations in leaf and stem morphology. Air dried leaves and stem were extracted separately using 80% methanol. The methanolic extracts were fractionated sequentially using petroleum ether, dichloromethane and ethyl acetate. Phytochemical analysis was carried out to detect variations in quercetin content in leaves and stems within the phenotypes. A reversed-phase ultra-performance liquid chromatography, using an ultraviolet diode array detector (RP-UPLC-UV/DAD) assay was standardized for quercetin detection and quantification in the ethyl acetate fractions. The results showed variation in quercetin contents between different phenotypes, and between leaves and stem. The highest quercetin content (14.09 mg/L) was present in stem of *G. tenax* phenotype SUST1. These results reinforce the strong phenotypic effect on the secondary chemical profile. The variability in quercetin content in *G. tenax* might be related to genotypic or parent of origin effects. The clear morphological characters variation measured in studied plants provided a good indicator to distinguish between them in quercetin contents.

hdaffalla@yahoo.com