

CHAPTER V

CONCLUSION AND RECOMMENDATION

This study examined the biochemical compounds of three different type of dates extracts and their corresponding compounds identified by GC-MS and LC-TOF-MS. The study showed that the mixture of 50 % methanol : 50 % chloroform were found the best design for the extraction of biochemical compounds in dates using GC-MS followed by methanol with hexane (50 % : 50 %) and combination of three solvents (33.3 % : 33.3 % : 33.3 %) to exploit the maximum number of compounds in GC-MS analysis compare to other solvent extracts. Among the fourteen chemical constituent that was identified in GC-MS, showing the high similarity index and peak area the three major compounds were, 6-methyl, 2,3-dihydro-3,5-dihydroxy-4H-Pyran-4-one ; 5-Hydroxymethylfurfural and 4-Mercaptophenol. The results showed that by using LC-TOF-MS with mixture design methanol and chloroform (50 % : 50 %), three major compounds; 6-methyl-3,5-dihydroxy-2,3-dihydro-4H-pyran-4-one; 5-o-caffeoylquinic acid; 3-o-caffeoylquinic acid and linolenic acid were detected with high intensity. Principal Components Analysis (PCA) performed on multivariate data of GC-MS results, showed the relationship between compounds extracted with polarity of solvents mixture from the scores and loadings plots. With respect to this study, the following recommendations are suggested to be employed in further research works: other solvents like butane, isopropanol and water can be used to get better profiling of the biochemical compounds. Other extraction technique may give higher concent-ration such as soxhlet extraction. Other type of column for GC-MS can also be changed for better separation.

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