

GC-SM analysis composition and antibacterial activity of Cucurbita pepo (Pumpkin) seeds harvested in Western Algeria

Berroukche Abdelkrim

Moulay Tahar University, Algeria

Abstract

Traditional medicine became an alternative avoiding chemicals' side effects. Currently, Research are focused on the natural substances to protect environment. Cucurbita pepo seeds oil has antioxidant and antibacterial properties [1-3]. This study aimed to determine composition of C.pepo seeds oil and assessing its antibacterial effect. The yield of oil extraction was 26.86 %. Composition analysis was carried out by gas chromatography-Mass spectrometry (GC-MS). C. pepo seeds oil extract was tested on bacterial growth of Escherichia coli, Staphylococcus aureus, Klebsiella pneumonia and Pseudomonas aerogenosa. GC-MS analysis showed saturated fatty acids (palmitic acid 13.1 % and myristic acid 8.8 %), unsaturated fatty acids (linoleic acid 45 % and oleic acid 19.6 %) and sterols (β -sistosterol 47 %, stigmasterol 23.6 % and campesterol 21.5%). C. pepo seeds oil extracts, used at different diluted concentrations (6.25, 1.56 and 0.19 mg/mL), showed high antibacterial activities against E. coli, S. aureus and K. pneumonia with zones of inhibition (25, 23 and 17 mm), (21, 20 and 15 mm) and (17,15 and 15 mm) respectively but P. aerogenosa was slightly sensitive (10, 10 and 10 mm). Minimum inhibitory concentration (MIC) of C. pepo seeds oil extracts were 0.012 mg/mL (E. coli and S. aureus), 1.56 mg/mL (P. aerogenosa) and 0.19 mg/mL (K. pneumonia) whereas commercial pumpkin seeds oil's MIC were 6.25 mg/mL (P. aerogenosa) and 1.56 mg/mL (K. pneumonia). The C. pepo seeds oil extract could be used as bio herbicides replacing chemicals known for their high toxicity on the environment..

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Biography

BERROUKCHE is professor in biology department, SAIDA University, Algeria. Received my PhD in cell biology, nutrition and oncology from SIDI-BEL-ABBES University,

Algeria. He has published more than 30 papers in reputed journals and has been serving as an editorial board member in different journals.