Investigation of antimicrobial and anti Alzheimer effects of Apium graveolens extract by inhibiting the production of amyloid nanobiofibrils

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Introduction: celery, by the scientific name apium graveolens contains effective active ingredients called phytol and caryophyllene, with 114 genius and 420 species, is a marshland plant in the family apiaceaa. It is also a matt green hairless plant with taproot and conical figure. It has branched fleshy stems and its nice smell is due to the existence of phthalide derivatives. The aim of this study was to evaluate the anti-microbial properties of hydro alcoholic extracts of celery and the effects of these extracts as an anti-Alzheimer's disease by inhibiting the process of fibril amyloid in bovine serum albumin. Materials and Methods: first, Celery powder was prepared and hydro alcoholic extracts was made 70% ethanol afterwards. After that, extract compounds was obtained with GC-MS. The effects of the anti-microbial properties on E.coli and staphylococcus aureus bacteria were examined using the anti biogram method and amount of MIC and MBC hydro alcoholic extracts. For further studies, the anti-Alzheimer's effects were also examined using spectrophotometry method and electron microscope. Results: The presence of the active Phytol up to 90% and Caryophyllene up to 99% applying spectrometry (GC/MS) was also confirmed. The diameter of the inhibition in celery extracts applying the agar well diffusion method demonstrated 40 mm in staphylococcus aureus and 16 mm in E.coli In the following, MIC and MBC results for staphylococcus aureus and E.coli bacteria were observed 23.1 mg/ml, 46.2 mg/ml and 46.2 mg/ml, 92.5 mg/ml respectively. Investing the antimicrobial effects of celery clarified that the antibacterial activity of celery on Gram- positive bacteria was higher than Gram-negative. The effect of anti-Alzheimer found that increased concentrations of celery (up 100%), the presence of amyloid fibers and minimal absorption and reduced red shift in the way Congo red was visible absorptiometry. Reduce the production of amyloid fibers, confirmed the anti-

Alzheimer's properties of celery. Conclusion : In general, we can conclude, celery has anti-microbial effects that contributes to complication and costs lower than other synthetic drugs and can be used as one of the most effective medicines to reduce Alzheimer's effects in humans.

Keywords : celery extract, phytol, caryophyllene, anti-microbial, anti-Alzheimer.