Investigation of antimicrobial effects of damask rose (Rosa damascena) extract and it's anti Alzheimer's effects by amyloid nano–biofibrils production inhibition method

Sanaz Mofakham cheraghi*,

Abstract Introduction: Rosa damascena plant is the most valuable natural sources that used in pharmaceutical, cosmetic and sanitary industries and the most important properties of this extract is antibacterial, antioxidant, anti-depressant and anti-alzheimeric. In this study, we investigated the antimicrobial effects and anti-Alzheimer's effects of R. damascena extract by inhibiting the production of amyloid nanobiofibrils. Materials and Methods: We used hydroalcoholic way for extracting of R. damascena. Antimicrobial effects of this extract was determined by agar well diffusion, minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) on standard strains of Staphylococcus aureus (PTCC1330) and Escherichia coli (PTCC1122). Also, we used ultraviolet-visible spectrophotometry to study the inhibitory effect of extract on the production of amyloid fibers. Results: According to the results of GC-Mass, the most important compounds in the Rosa damascene extract were Phenylethyl alcohol and Benzen and according to the results of agar well diffusion test, the extract of R. damascena showed weak inhibitory effect on S. aureus, as it was not effective on E. coli . Also due to the canescent of the culture because of exctract, MIC was not determined but, MBC for S. aureus was 233 mg/ml and for E. coli could not show antimicrobial effects. According study of amyloid biofibrils, R. damascena extract at concentration 0.15 mg/mg had the maximum inhibitory effect on the production of amyloid nanobiofibrils. Discussion and Conclusion: The results of this research showed that R. damascena extract has a weak inhibitory effect on S. aureus. Also, the increase of extract concentration had an inhibitory effect on the production of amyloid nanobiofibrils. So, the anti-Alzheimer

and antimicrobial effects of this extract can be studied more. Key words: Rosa damascena, antimicrobial, anti-Alzheimer, amyloid nanobiofibrils

Keywords : Rosa damascena, antimicrobial, anti-Alzheimer, amyloid nanobiofibrils