

Investigation of antimicrobial effects of *Boswellia serrata* (frankincense) extract and its anti Alzheimer effects by inhibiting the production of amyloid nanobiofibrils

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Introduction: *Boswellia serrata* resin is taken from some species of *Boswellia* plants. Plants of this genus are shrubs and they are in the family of Burseraceae. With a gap in the trunk of the shrubs, the white resin is removed. These *B. serrata* resins in the vicinity of the air get gradually hardened and we can see them in small size, shapeless or spherical with white, yellow, light brownish, white to blue or green colors and can find them at the bottom of the trees. The effective substance of *B. serrata* resin is boswellic acid, a group of pentacyclic terpenoids, which is the main substance of *B. serrata* resin. The purpose of this study was to investigate the antimicrobial effects and anti-Alzheimer's effects of *B. serrata* resin extract by inhibiting the production of amyloid nanobiofibrils. **Materials and Methods:** First, the *B. serrata* resin was powdered and after extraction the extracts were examined by Gas chromatography-mass spectrometry (GC-Mass). The antimicrobial effects of the *B. serrata* resin extract on standard strains of *Staphylococcus aureus* and *Escherichia coli* were recorded by using antibiogram test. Also, the MIC and MBC for extract were determined on *S. aureus* and *E. coli*. Anti-Alzheimer's effects were performed by using ultraviolet-visible spectrophotometry. **Results:** According to the results of agar well diffusion, the zones of inhibition were 14mm for *S. aureus* and 12 mm for *E. coli*. MIC for *S. aureus* and *E. coli* were 2/5mg/ml. Also, MBC for *S. aureus* and *E. coli* were 5µg/ml. The resin of *B. serrata* also showed anti-Alzheimer's effects. **Conclusion:** In the study of the antimicrobial effects of *B. serrata* resin, we found that antibacterial activity of the *B. serrata* resin on the gram-positive bacteria is more than of gram-negative bacteria and *B. serrata* resin can be used as one of the most effective medicines to

reduce anti-Alzheimer's effects in human.

Keywords : Boswellia serrata resin, Antimicrobial, Anti-Alzheimer's, Amyloid

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