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Comparison effect of honey bee venom on pathogenic bacteria compared with common antibiotics

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Statement of the Problem: In recent years, antibiotics resistance has been spreading considerably, so that it is becoming a severe problem in modern medicine. Animal venoms possess antibacterial properties among which honey bee venom shows anticancer, anti-inflammation and antimicrobial properties. The aim of this study is to investigate the effect of unrefined bee venom on some species of pathogenic bacteria compare with common antibiotics.

Methodology & Theoretical Orientation: Honey bee venom was collected, and different concentrations were applied against Staphylococcus aureus, Pseudomonas aeruginosa and Klebsiella pneumoniae using disk diffusion method. Then MIC and MBC were calculated compared with one common Antibiotics. Comparison between concentrations was analyzed in 24, 48 and 72 hours.

Findings: Results showed that different bee venom concentrations possess inhibitory effect on pathogenic species. Among these pathogens, K. pneumoniae was the most sensitive against the venom, P. aeruginosa was the most resistant one and the venom had the most effect on S. aureus and K. pneumoniae. Comparison between the venom with common antibiotics revealed that the venom poses a low effect while tetracycline showed a better effect on P. aeruginosa compared with the venom and other antibiotics.

Conclusion & Significance: Results showed that honey bee venom has generally antimicrobial properties on pathogens. So more accurate toxicology examinations and derivation its compositions can help us to formulate new natural antibiotics.

Biography

Jahangir Gavanji was introduced as the Best Elite and Inventor of Iran by Ministry of Science in 2008. He could win the global medal of invention in Germany in 2006.He continued his education in Azad University of Dolata bad branch. He was also chosen as the best Iranian young in invention and innovations in 2009.

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