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Investigation of some factors correlated with antibacterial activity of honey

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Honey was found to have a curing effect on bacterial species known to cause wound infections. The aim of this research is to study some of the factors correlated with the antibacterial activity of a variety of Saudi honey. Honey samples different in floral source, geographic location and season of production were used. The tested organisms represented both gram positive and gram negative bacteria causing wound infection. A zone of complete inhibition of all bacterial species was seen with honey types Samra (S-W), Samra (W-S), Saha (W-S), Samra (S-S), Sidir (S-S) and Sidir (S-W) and a larger zone of partial inhibition of growth was seen with all tested honey types. It can be concluded that osmolarity is involved in the antibacterial activity of the honey. Acidity might be regarded as being of primary importance. On the other hand hydrogen peroxide was found to play a major role in the bacterial activity of honey.

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Bioactivity of Samsun ant (*Pachycondylasennaarensis*) venom against lipopolysaccharides through antioxidant and up-regulation of AKT1 signaling in rats

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Background: This study aimed at investigating the oxidative stress ameliorating effect, lipids profile restoration and the anti-inflammatory effect of Samsun Ant Venom (SAV) in induced endotoxemic male rats injected with bacterial lipopolysaccharides (LPS).

Results: Results revealed that LPS significantly increased the oxidative stress indications in LPS-injected rats. A significant increase of both malondialdehyde (MDA) and advanced oxidative protein products (AOPP) as well as a significant suppression of glutathione were all detected. Treatment with 100 µg/kg dose of SAV significantly restored the oxidative stress normal indications and increased the total glutathione levels. Treatment of the LPS-rats with 100 µg/kg dose of SAV showed a clear anti-inflammatory function as the histological architecture of the hepatic tissue was partially recovered along with a valuable decrease in the leukocytes infiltrated the hepatic tissues. Treatment of some rat groups with 600 µg/kg dose of SAV after LPS injection induced a severe endotoxemia that resulted in very high mortality rates; SAV versus the effects of LPS on AKT1, Fas, TNF-α and IFN-γ mRNA expression. SAV was found to significantly lower Fas gene expression comparing to the LPS group and restore the level of IFN-γ mRNA expression to that of the control group.

Conclusion: In conclusion, SAV at the dose of 100 µg/kg body weight maintained and restored the oxidative stability, the anti-inflammatory and the hypolipidemic bioactivity in rats after induced disruption of these parameters by LPS injection. This improvement by SAV was mediated by up-regulation of AKT1.

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