

Pollen bee aqueous extract-based synthesis of silver nanoparticles and evaluation of their Anti-cancer and Anti-bacterial activities

Hanan M. Al-Yousef

King Saud University, Saudi Arabia

Abstract

Bee pollens are rich source of essential amino acids and are often considered as complete food for human beings. Herein, we exploited the potential reducing abilities of Bee pollens extract for the ecofriendly preparation of silver nanoparticles (AgNPsG). The resulting NPs were characterized using a combination of microscopic and spectroscopic techniques. The analyses confirm the formation of spherical Ag NPs. AgNPs-G obtained from the aqueous extract of bee pollens was used to study their antibacterial properties against Gram-positive and Gram-negative microbes using the Minimum Inhibitory Concentration 50(MIC50) method. The antibacterial properties of AgNPs-G were compared to the properties of chemically synthesized Ag NPs (AgNPs-C) using sodium borohydride as a reducing agent. The green synthesized nanoparticles (AgNPs-G) exhibited a better antibacterial activity against most of the studied strains when compared to the chemically synthesized Ag NPs (AgNPs-C). In addition, the anti-cancer activity of Ag NPs was also studied against human liver and breast carcinoma cell lines by applying MTT-assay. The Ag NPs demonstrated considerable anticancer activity against the studied cell lines and exhibited high IC50 values in both MCF-7 and HepG2 cell lines.



Ph.D on 2012, and started her academic carrier as assistant professor at King Saud University, and promoted to Associate professor on 2019. Hanan has successfully published several papers.

Speaker Publications:

1. "Onion Peel Ethylacetate Fraction and Its Derived Constituent Quercetin 4'-O-B-D Glucopyranoside Attenuates Quorum Sensing Regulated Virulence and Biofilm Formation".
2. "Hepatorenal protective effect of Antistax® against chemically-induced toxicity".
3. "Proanthocyanidin-rich date seed extract protects against chemically induced hepatorenal toxicity".
4. "The Mechanism Underlying the Spasmolytic and Bronchodilatory Activities of the Flavonoid-rich Red Onion Allium cepa L. Peel Extract".
5. "Ultra performance liquid chromatography-tandem mass spectrometric analysis of ethyl acetate fraction from Saudi Lavandula coronopifolia Poir and evaluation of its cytotoxic and antioxidant activities".

[3rd International Conference on Herbal & Traditional Medicine;](#) Webinar- September 23-24, 2020.

Abstract Citation:

Hanan M. Al-Yousef, Pollen Bee Aqueous Extract-Based Synthesis of Silver Nanoparticles and Evaluation of Their Anti-Cancer and Anti-Bacterial Activities, Herbal Traditional 2020, 3rd International Conference on Herbal & Traditional Medicine; Webinar- September 23-24, 2020

(<https://herbal-traditional.conferenceseries.com/2020>)



Biography:

Hanan M. Al-Yousef is Associate professor at Department of Pharmacognosy, College of Pharmacy, King Saud University, Saudi Arabia. She started his research on Physical chemistry at King Saud University. During her Ph.D. she joined research groups at Pharmacy in King Saud University. She obtained