

OP 26 - Formulation and in vitro Evaluation of a Face Gel with Seed Extracts of *Coriandrum sativum* L. for Acne Vulgaris

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Background: Acne vulgaris is one of the most prevalent chronic dermatologic pathological conditions in the world involving inflammation of pilosebaceous units (hair follicles and their accompanying sebaceous gland). It is characterized by follicular hyperproliferation, seborrhea, *Propionibacterium acnes* (an anaerobic bacterium that mostly resides in the pilosebaceous follicles of the skin) and *Staphylococcus aureus* infection and inflammation. Extracts of spices like seeds of *Coriandrum sativum* L. possess a diverse array of natural phytochemicals which play a vital role in bacterial infections, and consequently may have propitious anti-acne activity.

Objectives: The objectives of this study were to screen anti-bacterial effect of the seed extracts of *C. sativum*, develop a topical gel base and to formulate an anti-acne face gel against *P. acnes* and *S. aureus*.

Methodology: The gel base was prepared by using carbapol 940, phenoxy ethanol, EDTA, rose water and triethanolamine. The anti-bacterial effect of series of anti-acne gel formulations with three different concentrations of the seed extract of *C. sativum* was evaluated by agar well diffusion method. The agar plates were incubated in an anaerobic jar with a gas pack and an indicator for 48 hours under 37 °C to determine the anti-bacterial activity against *P. acnes*, and to determine the anti-bacterial activity against *S. aureus*, agar plates were incubated for 24 hours under 37 °C.

Results and conclusions: All gel formulations with the seed extract of *C. sativum* exhibited anti-bacterial effects against *P. acnes* and *S. aureus*. The zones of inhibition were observed as 7-9 mm and 7-11 mm against *P. acnes* and *S. aureus*, respectively. The observations demonstrate that all the topical gel formulations developed with the extract of *C. sativum* possess anti-acne activity and the effect becomes greater when the proportion of the extract in the formulation increases.

Keywords: Acne vulgaris, *Coriandrum sativum* L., *Propionibacterium acnes*, *Staphylococcus aureus*