

# ANTI-ALLERGIC POTENTIAL OF ETHANOLIC EXTRACT OF *CORIANDRUM SATIVUM* LEAVES IN CONJUNCTIVITIS: AN EXPERIMENTAL STUDY IN RATS

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## ABSTRACT

The *in vitro* antioxidant activity of the ethanolic extract of *Coriandrum sativum* (*C. sativum*) leaves was performed by DPPH scavenging and ferrous chelating methods. To induce allergic conjunctivitis, an intraperitoneal injection of 0.6 mL saline containing alum (2 mg), egg albumin (1 mg) and  $10^{10}$  cells inactivated *Bordetella pertussis* was administered on the first day. On the fifth day, a booster dose was given subcutaneously, consisting of egg albumin (0.5 mg) injected at 10 sites on the back of rats. From the 14<sup>th</sup> to the 42<sup>nd</sup> day, rats were orally administered ethanolic extract of *C. sativum* leaves (EECS) in doses of 100 mg kg<sup>-1</sup>, 200 mg kg<sup>-1</sup>, and 400 mg kg<sup>-1</sup>, depending on their respective groups. The standard group received 10 mg kg<sup>-1</sup> cetirizine hydrochloride orally. 1 h after dosing, local sensitization was performed by applying 5  $\mu$ L of egg albumin into both eyes using a micropipette. It was noted how frequently eye-scratching behaviours occurred over a five-minute period following the sensitization. Allergic symptoms, including conjunctival redness and swelling, were evaluated at five and twenty minutes, respectively. After 24 h of 14<sup>th</sup> and 42<sup>nd</sup> day treatment, one animal from each group was euthanised. The conjunctiva was excised, and 4- $\mu$ m-thick sections were stained to assess eosinophil infiltration. Results showed that the ethanolic extract of *C. sativum* leaves produced *in vitro* antioxidant properties by DPPH scavenging and metal chelating activity against iron, with IC<sub>50</sub> values of 200  $\mu$ g mL<sup>-1</sup> and 2000  $\mu$ g mL<sup>-1</sup>, respectively. The extract considerably reduced eosinophils infiltrating the conjunctival tissues ( $p < 0.01$ ) and significantly lowered allergy symptoms and eye scratching behaviours ( $p < 0.001$ ). Therefore, we conclude that the ethanolic extract of *C. sativum* leaves produced a significant anti-allergic conjunctivitis activity.