

## Studies on Blackcurrants and Asthma/Airway Inflammation

**Title:** Blackcurrant Proanthocyanidins augment IFN- $\gamma$ -induced suppression of IL-4 stimulated CCL26 secretion in alveolar epithelia cells.

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**Study:** The purpose of this study was to specifically identify and evaluate the effectiveness of blackcurrant Polyphenolic compounds (anthocyanins and proanthocyanidin) to suppress CCL26 secretion in alveolar epithelia cell-line. The suppression of CCL26 in the lung tissue may serve to ameliorate the chronic eosinophilic inflammation observed in asthma patients.

**Results:** Proanthocyanin-enriched blackcurrant extract (BCP) was able to suppress both IL-4 and IL-13 stimulated CCL26 secretion in a dose dependent manner. Pre-incubation of cells with BCP caused a time-dependent suppression of IL-4-stimulated CCL26 secretion. Epigallocatechin (EGC) identified in the proanthocyanidin extract, suppressed IL-4-stimulated CCL26 secretion. Both BCP and EGC potentiated the ability of IFN- $\gamma$  to suppress IL-4-stimulated CCL26 secretion.

**Conclusion:** Our findings support the potential for blackcurrant Polyphenolic compounds to reduce eosinophil recruitment and alleviate eosinophilic-driven airway inflammation. It is feasible that blackcurrant metabolites, such as EGC, may be able to modulate eotaxin expression in lung tissue. The results of this study, to our knowledge, are the first to demonstrate that blackcurrant proanthocyanidin metabolites suppresses IL-4 (and IL-13)-stimulated CCL26 secretion independently, and synergistically with IFN- $\gamma$ .