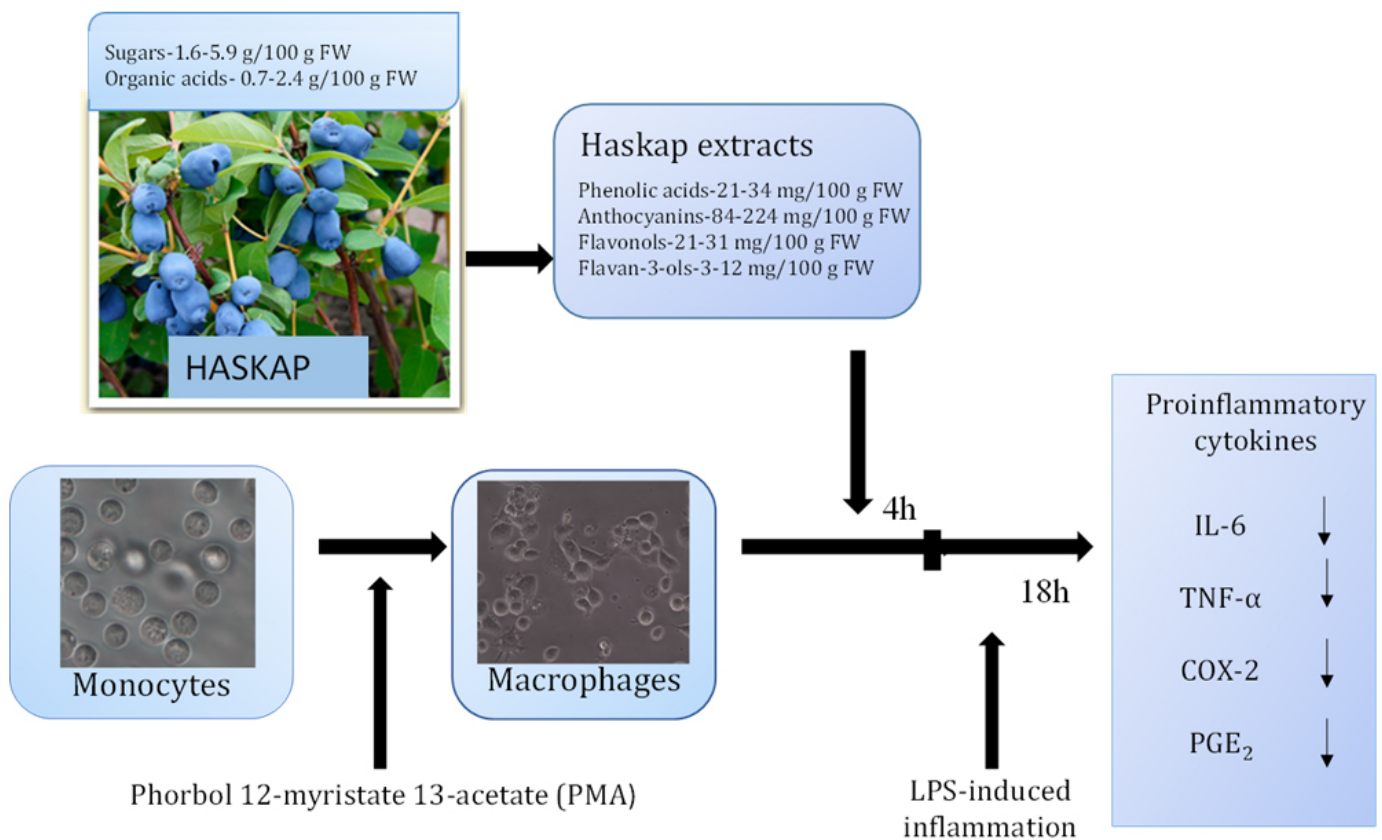


Health benefits of haskap: Possible control of inflammation-mediated chronic disorders

Biologically active phytochemicals present in cool climate berries such as haskap (*Lonicera caerulea* L.) offer a great alternative therapy for mitigation of most of the chronic disorders. In general, polyphenols in fruits have shown the potential to terminate free radical reactions due to their multiple modes of antioxidant activity. The cellular damage caused by the reactive oxygen species can affect cell signaling causing chronic inflammation. Chronic inflammation is known to contribute to the risk of developing metabolic disorders such as cardiovascular disease, neurodegenerative disease, diabetes and various cancers. Inflammation is a pathophysiological response of living tissue to injuries, mediated by macrophages, leukocytes and neutrophils. The inflammation cascade involves various factors and enzymes, mainly cyclooxygenase (COX)-2, tumor necrosis factor-alpha (TNF- α), interleukins, interferon-gamma (IFN- γ) among others. However, risk for the metabolic disorders can be reduced through changing the life style including improving diet. The role of dietary antioxidants such as polyphenols presence in fruits have now been recognized for their physiological benefits in reducing these metabolic disorders.



Polyphenols extracted from haskap berries has shown the control of pro-inflammatory biomarkers in an experimental model using human monocytes.

Research conducted at the Dalhousie University Agricultural Campus has demonstrated that the antioxidant properties and total phenolic content of some cultivars of haskap to be competitive with other berries, thereby suggesting its health promoting potential. Among the tested haskap cultivars, Borealis showed the highest phenolic content, flavonoid content and anthocyanin content. Among the polyphenols measured in haskap, cyanidin-3-O-glucoside, cyanidin-3-O-rutinoside, chlorogenic acid and rutin were found in the highest concentrations.

Recent studies at Dalhousie University has also shown a negative correlation existed between the polyphenol concentration of the extracts prepared from haskap and pro-inflammatory cytokines such as interleukin-6 (IL-6), TNF- α , prostaglandin (PGE₂) and COX-2 enzyme. Borealis exhibited comparable anti-inflammatory effects to non-specific COX inhibitor drug, diclofenac. These preliminary results have shown that haskap berry polyphenols has the potential to act as an effective inflammation inhibitor. The major polyphenols found in haskap have been implicated in inhibiting inflammatory biomarkers or transcription factors in previous reports as well. Overall, the results suggest that polyphenols-rich haskap berry has a potential to use as an effective functional food or dietary supplement to control inflammation.

Publication

[Anti-Inflammatory Activity of Haskap Cultivars is Polyphenols-Dependent.](#)

Rupasinghe HP, Boehm MM, Sekhon-Loodu S, Parmar I, Bors B, Jamieson AR
Biomolecules. 2015 Jun 2