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## Aronia Melanocarpa and Its Components Demonstrate Antiviral Activity Against Influenza Viruses

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### Abstract

The influenza virus is highly contagious in human populations around the world and results in approximately 250,000-500,000 deaths annually. Vaccines and antiviral drugs are commonly used to protect susceptible individuals. However, the antigenic mismatch of vaccines and the emergence of resistant strains against the currently available antiviral drugs have generated an urgent necessity to develop a novel broad-spectrum anti-influenza agent. Here we report that *Aronia melanocarpa* (black chokeberry, *Aronia*), the fruit of a perennial shrub species that contains several polyphenolic constituents, possesses *in vitro* and *in vivo* efficacy against different subtypes of influenza viruses including an oseltamivir-resistant strain. These anti-influenza properties of *Aronia* were attributed to two constituents, ellagic acid and myricetin. In an *in vivo* therapeutic mouse model, *Aronia*, ellagic acid, and myricetin protected mice against lethal challenge. Based on these results, we suggest that *Aronia* is a valuable source for antiviral agents and that ellagic acid and myricetin have potential as influenza therapeutics.

**Keywords:** Antiviral; Influenza virus; Polyphenol; Therapeutics.

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