



*Weekly News from Berry Science  
and the Superfruits Industry*

# *The Common Thread of Anthocyanins:*

*What do they do in  
the human body?*

*Part 2 of 2*



Anthocyanins are everywhere in nature,  
even in the purple colors of flower petals

[follow the [Wikipedia](#) links]

*Read Part 1 for background and current  
research on anthocyanins, [click!](#)*

Mention anthocyanins and most assume that these water-soluble pigments have the same [antioxidant properties](#) in the body after digestion as they do in test tubes of the laboratory.

## *Digestion changes everything!*

Once anthocyanins enter the **acid** and **enzyme environment of the stomach**, their shape, chemical structure and potential bioactivity change completely, making in vitro definition of their **antioxidant properties totally irrelevant** to human physiology.

Characteristics of the broken-down structures called derivatives:

- shortened segments of the parent anthocyanin studied in vitro
- there are more of them
- they are smaller
- their fate in vivo is very different from what the parent molecule would have
- their effects in the human body are almost impossible to study and define with current laboratory methods

*Most importantly, there is no evidence whatsoever that the anthocyanin derivatives are antioxidants in the human body.*

Accordingly, claims by superfruit manufacturers that their products containing anthocyanins translate to antioxidant health benefits are completely false!



Concord grapes (*Vitis vinifera* cvr.) are among the richest sources of fruit anthocyanins

There are new research-based theories about what anthocyanins may be doing in the human

body after digestion. Here are a few

- alter on-off switches for genes
  - alter receptor sensitivity
  - alter cell-to-cell signaling
- alter rates of **apoptosis** ("eh-poh-toe-sis")
  - modify proteins, enzymes and DNA
- affect inflammatory mediators, serving as anti-inflammatories, not as antioxidants

Read a **summary article about potential physiological roles of anthocyanins in the human body** -- *click!*  
mechanisms pertaining to cardiovascular disease  
and cancer are discussed

(anthocyanins are a subfamily of the plant chemicals called **flavonoids**)

**Previous Berry Doctor coverage of anthocyanins,  
an 8-part series (2007), *click!***



Anthocyanins account for the colors of  
these three different berry species --  
blackberries, red raspberries, blueberries.

*Check out the  
new Archives just for superfruit essays, *click!**

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