

Milk protein could help boost blueberries' healthfulness

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A maturing 'Polaris' blueberry (*Vaccinium corymbosum*) Credit: Public Domain

Pairing blueberry pie with a scoop of ice cream is a nice summer treat.

Aside from being tasty, this combination might also help people take up more of the superfruit's nutrients, such as anthocyanins. Researchers reporting in ACS' *Journal of Agricultural and Food Chemistry* show that α -casein, a protein found in cow's milk, helped rats absorb more blueberry anthocyanins and their byproducts, boosting accessibility to these good-for-you nutrients.

In studies, anthocyanins have been shown to have antioxidant properties, [lower blood pressure](#) and reduce the risk of developing some cancers. However, only small amounts of these nutrients are absorbed from blueberries during digestion, despite their abundance in the fruit. Previous researchers have reported that consuming foods with ingredients such as citrus pectin, capcasin, capsicate and some proteins improve the uptake of anthocyanins. For instance, Bin Li and colleagues found that α -casein and β -casein proteins from [cow's milk](#) protected blueberry anthocyanins in simulated digestion experiments. Now, this team wanted to see whether α -casein could help increase the absorption of blueberry anthocyanins in vivo.

The researchers fed rats purified [blueberry anthocyanin](#) extracts, adding α -casein to the solution given to one group of rats. During the next 24 hours, anthocyanin and metabolite concentrations were 1.5 to 10.1 times higher in the α -casein group than in the control rats. When examining α -casein's molecular structure, the researchers observed that its [amino acids](#) allowed it to interact with and encapsulate the anthocyanin molecules, improving their stability in the intestines and allowing for better transport into the bloodstream. While the α -casein protein used in these experiments was derived and purified from milk, the results may not be the same for whole milk because its fats and sugars could impact absorption, the researchers explain. They say their next step is to conduct similar tests with human subjects.

More information: Yuxi Lang et al, Effects of α -Casein on the

Absorption of Blueberry Anthocyanins and Metabolites in Rat Plasma Based on Pharmacokinetic Analysis, *Journal of Agricultural and Food Chemistry* (2021). [DOI: 10.1021/acs.jafc.1c00082](https://doi.org/10.1021/acs.jafc.1c00082)

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