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ATHENA

AnThocyanin and polyphenol
bioactives for Health Enhancement
through Nutritional Advancement.



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Anthocyanins and Health

Anthocyanins are health promoting pigments made by plants that have been shown to protect against cardiovascular disease, cancer and obesity in preclinical studies with animals.

The ATHENA project will address how well dietary anthocyanins protect against different chronic diseases.

The ATHENA project will investigate:

Benefits and risks:

- What is the dose response to anthocyanin phytonutrients?
- Are anthocyanins from different food sources equivalent?
- How well do anthocyanins perform in promoting health compared to other phytonutrients?

Mechanisms of action:

- What are the mechanisms of action of polyphenol phytonutrients in combating chronic diseases; obesity, cardiovascular disease and cancer?

Food or Pharma?:

- Supplements of polyphenols do not promote health as well as when they are consumed in whole foods. What is the influence of nutritional context on the efficacy of polyphenol phytonutrients?

Do dietary anthocyanins afford protection in humans?

Projected achievements:

- It will generate added value from interdisciplinary collaborations between experts in plant biotechnology, genetics, organic chemistry, food technology, nutrition, experimental medicine and clinical epidemiology.
- It will inform new food formulations and dietary recommendations for healthy living and improved quality of life.



It will answer these questions:

- How much dietary anthocyanin is needed to see health promoting benefits, what is the dose response and is there a possibility of excessive consumption?
- How do dietary anthocyanins compare with better known, but less nutritionally available polyphenols?
- What are the mechanisms by which dietary anthocyanins protect the cardiovascular system, limit cancer progression and reduce weight gain in high fat diets?
- Do purified anthocyanins have the same health promoting effects as anthocyanins in food?
- Is the bioavailability of anthocyanins linked to their presence in food?
- Do long term dietary interventions with anthocyanin-enriched foods offer protection against cardiovascular disease in humans?
- Can anthocyanin supplements in the diet limit the damage caused by radiation therapy in breast cancer patients?
- Is the response to dietary polyphenol phytonutrients dependant on our genes, and could this lead to more personalised treatments?

