

Blue Maize as a Potential Nutraceutical in the Prevention of Colon Cancer and Metabolic Syndrome

Rosa Isela Guzmán-Gerónimo

Basic Sciences Institute, University of Veracruz, Xalapa, Veracruz, México

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Case Blog

The Nutraceuticals containing anthocyanins are of special interest, since many studies *in vivo* as well as *in vitro* show evidence on their antioxidant activity, together with other important health benefits such as anti-cancer, anti-diabetic, anti-inflammatory and neuroprotective effects (**Figure 1**). Due to this variety of biological properties, anthocyanins are considered multi-functional nutraceuticals and their consumption may benefit one or more functions in the body. An important source of these phenolic compounds is blue maize: studies on an animal model with metabolic syndrome showed a significant improvement in the levels of systolic arterial pressure, HDL cholesterol, and

Corresponding author:

Rosa Isela Guzmán-Gerónimo

✉ roguzman@uv.mx

Basic Sciences Institute, University of Veracruz, Xalapa, Veracruz, Mexico.

Tel: +52 953 532 0399

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Figure 1 Blue maize: Nutraceuticals containing anthocyanins.

triglycerides when given a supplement of a blue maize extract from the Mixteco race [1]. Furthermore, anthocyanins from the same source have shown anti-proliferative activity on colon cancer cells from the HCT-15 line [2]. On the other hand, metabolic syndrome is a group of risk factors for diabetes type II and cardiovascular disease characterized by insulin resistance, dyslipidemia, hypertension, abdominal obesity and hyperglycemia. In recent years, a direct relationship between metabolic syndrome and certain types of cancer – such as colon – has been reported. The bioactive compounds from blue maize may be helpful in the prevention of metabolic syndrome and colon cancer, having a good potential as nutraceuticals. New research is needed on the health effects of blue maize, as it may help prevent diseases related to the metabolic syndrome.

References

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- 2 Guzmán-Gerónimo RI, Alarcón-Aparicio E, García-Barradas O, Alarcón-Zavaleta T, Chávez-Servia JL, et al. (2017) chemical, antioxidant, and cytotoxic properties of native blue corn extract. In: Badria FA, (ed). *Natural products and cancer drug discovery*. Intech. In press.