Biochemists dip into the health benefits of olives and olive oil

September 12 2017


EXTRA VIRGIN
OLIVE OIL
NET 34 FL OZ (1L)

Olive oil being poured over food. Credit: Centers for Disease Control and Prevention.

The health benefits of olives— and associated natural products such as olive oil—have long been recognized and touted by proponents of the Mediterranean diet.

However, little was previously known about what specific compounds and biochemical interactions in the fruit contribute to its medical and nutritional benefits such as weight loss and prevention of type 2 diabetes.

A Virginia Tech research team discovered that the olive-derived compound oleuropein helps the body secrete more insulin, a central signaling molecule in the body that controls metabolism. The same compound also detoxifies another signaling molecule called amylin that over-produces and forms harmful aggregates in type 2 diabetes. In these two distinct ways, oleuropein helps prevent the onset of disease.

The findings were recently published in the journal *Biochemistry* as a Rapid Report, which is reserved for timely topics of unusual interest, according to the journal.

"Our work provides new mechanistic insights into the long-standing question of why olive products can be anti- diabetic," said Bin Xu, lead author, assistant professor of biochemistry in the College of Agriculture and Life Sciences, and a Fralin Life Science Institute affiliate. "We believe it will not only contribute to the biochemistry of the functions of the olive component oleuropein, but also have an impact on the general public to pay more attention to olive products in light of the current

diabetes epidemic."

The discovery could help improve understanding of the scientific basis of health benefits of olive products and develop new, low-cost nutraceutical strategies to fight type 2 diabetes and related obesity.

Next steps include testing the compound in a diabetic animal model and investigation of additional new functions of this compound, or its components, in metabolism and aging.

More information: Ling Wu et al, Olive component oleuropein promotes β-cell insulin secretion and protects β-cells from amylin amyloid induced cytotoxicity, *Biochemistry* (2017). DOI: 10.1021/acs.biochem.7b00199

Provided by Virginia Tech