Standardized testing method for cranberry products will reveal effectiveness of UTI treatments

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Natural compounds in cranberries are linked to the prevention of urinary tract infections (UTIs) but inconsistencies in methods currently used commercially to measure levels can result in the over- or under-estimation of potency levels, leaving product manufacturers and consumers without good data. A study published today in the *Journal of the Science of Food and Agriculture* outlines a new, commercially viable method of measuring these compounds.

UTIs are caused by bacterial adhesion (bacteria growth) on cells in the bladder. To maintain urinary tract health, especially for those prone to UTIs, daily consumption of 36mg of cranberry proanthocyanidins (PACs) has shown effectiveness in inhibiting bacteria from adhering to bladder cells, multiplying and consequently causing infection. This amount of PACs can be easily consumed in a 9-10 oz (266-296 ml) serving of 27% cranberry juice cocktail.

PACs are small molecules (catechin or epicatechin) linked together to form larger polymers. The PACs in cranberries contain a high proportion of what are called "A-type double linkages" between the catechin or epicatechin molecules. Other food sources of PACs that do not contain these linkages (chocolate, grapes, apples and green tea) do not elicit the bacterial anti-adhesion activity.

With some cranberry product testing methods, overestimation of up to

five times the PAC level have been reported. This study uses the new BL-DMAC method of quantifying PAC levels in cranberry products which the authors claim can now serve as the standard industry method, allowing product manufacturers to provide accurate PAC levels.

To evaluate this method, 11 samples of cranberry products were obtained (five from U.S. sources and six from European sources) for PAC quantitation analysis. Powdered samples were coded and sent blinded to five different analytical laboratories (three in the U.S., one in China and one in Europe) for analysis by the BL-DMAC method. Each laboratory reported statistically consistent results of PAC levels.

"It is important to have an accurate, standard method for cranberry PAC quantitation that can be performed quickly and inexpensively in any commercial lab," said Ronald L. Prior, Ph.D, lead author of the study. "In our study, we have shown that the BL-DMAC method is validated for this use. It utilizes a commercially available standard, which is vital to obtaining accurate results among different laboratories."

"Universal adoption of this standard worldwide by the cranberry industry will allow producers to use one standard method to ensure accurate labelling of PAC levels in products, and aid consumers in selecting products with sufficient PAC levels to obtain bacterial anti-adhesion activity," added Prior.

Provided by Wiley