

Cranberry fruit and leaf polyphenols inhibit *Staphylococcus* bacterial biofilms

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Cranberry (*Vaccinium macrocarpon*) is known for urinary tract health benefits associated with reducing the adhesion of *E. coli* bacteria. This property has been linked to cranberry polyphenols known as proanthocyanidins. *Staphylococcus* bacteria are a growing public health concern due to development of resistant strains. Identification of agents that inhibit biofilm formation by these bacteria may provide a new route to reduce infection in clinical settings. Fruit and leaves of North American cranberry (*Vaccinium macrocarpon*) and cranberry juice were fractionated and screened for their ability to prevent biofilm formation by several strains of *S. aureus* and *S. epidermidis* bacteria. MALDI-TOF MS analysis of the most bioactive fractions identified the major constituents as proanthocyanidin oligomers (PACs) with A-type linkages, ranging in size from 2-12 degrees of polymerization. Further characterization by NMR is underway. The polyphenol-rich fractions from cranberry leaf, fruit and juice inhibited biofilm formation by strains of *S. aureus* and *S. epidermidis*, with MBIC as low as 3.1 µg/mL, and without significant bacteriocidal activity. Thus, compounds from cranberry fruit, plant material and juice may be useful in reducing *Staphylococcus* biofilms without promoting resistance.