

ANTIBACTERIAL ACTIVITY OF PHYTOSUBSTANCES FROM LARGE-FRUITED CRANBERRY

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Urinary tract infections remain one of the most important problems of modern urology and medicine in general. According to statistics, UTI ranks second after respiratory tract infections in terms of ambulatory care. Herbal preparations are used to treat urinary system infections. In this aspect large-fruited cranberries are a promising plant.

Due to the harmonious combination of biologically active substances, cranberries show a pronounced antibacterial, anti-inflammatory, antioxidant and phytochemicals from large-fruit cranberries are quite promising in the treatment and prevention of urinary tract infections.

Cranberry juice and its other forms continue to be used to reduce relapses of infectious processes of urinary system, although mechanism of preventive action of cranberries is not clear. Cranberry juice effects were thought to be a consequence urine acidification. However it is possible that this is not the main mechanism of its action. In addition the concentration of hippuric acid in urine as a result ingestion of cranberry juice is insufficient to suppress bacteria. It seems that the sanogenetic action of cranberry juice occurs by another mechanism. Recently, an active cranberry component, the trimeric A-type of proanthocyanidine, has been identified. The main mechanism by which cranberry has a therapeutic and prophylactic effect is the suppression / destruction of the connection of P-fimbriae of uropathogens with the mucous membrane of the urinary system. The antiadherent activity of cranberry juice was found but its essential role in urine acidification was not taken into account. Cranberry proanthocyanidins can inhibit uropathogenic strains of *Escherichia coli*, prevent their attachment to the membrane of the uroepithelium. Cranberry juice contains 2 such inhibitors, one of which is fructose, the other has not yet been fully identified. Cranberry juice inhibited the adhesion of 60% of *E. coli* strains to the bladder epithelium by more than 75%. The uroprotective role of cranberry juice has also been shown against other pathogens - *Proteus mirabilis*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Enterobacter* spp and *Pseudomonas aeruginosa*.