

Key Features:

- Herbal Powdered Drink - A Good Way to Hydrate
- Great Taste With NO Added Caloric Sugar
- Each Scoop Contains:
 - » Cranberry Juice Concentrate (7,200 mg fresh juice equivalent)
 - » Hibiscus Extract (6,000 mg dried herb equivalent)
 - » D-Mannose (1,500 mg)
- Excellent Adjunct to Antibiotic Therapy

Description:

UTI-XP is a comprehensive, highly potent formula to help relieve and prevent recurrent urinary tract infections.

Hibiscus extract, cranberry extract, and d-mannose work synergistically to inhibit the adhesion of uropathogenic bacteria like *E. coli* to the urinary tract linings, disrupting biofilm formation, and exerting antimicrobial effects.

Cranberry Extract

Cranberry juice has been shown to inhibit the colonization of various uropathogenic *E. coli* strains, which cause 80-90 percent of all UTIs,^[1] via two major mechanisms:

- Inhibiting the formation of biofilm^[2] synergistically supporting antimicrobials^[3]
- Disrupting the adherence of p-fimbriated* *E. coli* to the uroepithelial cells^{[4],[5]}

*Strains of uropathogenic *E. coli* have surface structures called P-fimbriae that support adhesins, by means of which they bind to the receptors of the uroepithelial cells.

In a randomized controlled trial involving 150 sexually active women, subjects were assigned to receive either cranberry tablets, diluted cranberry juice, or placebo.^[6] Both cranberry tablets and juice significantly decreased the number of patients

Quantity: approx. 168 g (28 scoops)

Ingredients (per scoop):

Cranberry Juice Concentrate (12:1).....600 mg
(*Vaccinium macrocarpon*)
(equivalent to 7,200 mg of fresh juice)
D-Mannose.....1,500 mg
Hibiscus sabdariffa Extract.....500 mg
(12:1) (6,000 mg dried herb equivalent)

Non-medicinal Ingredients:

Erythritol (certified organic), rebaudioside M

Suggested Use:

Adults - Take 1-2 scoops a day, or as directed by a health care practitioner. Thoroughly mix 1 scoop with 150 mL of water. Use for at least 4 weeks to see beneficial effects.

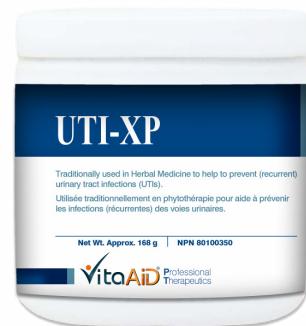
experiencing at least 1 symptomatic UTI per year to 20% and 18%, respectively, compared with placebo (32%) ($p<0.05$). Total antibiotic consumption was also less in both treatment groups compared with placebo.

Hibiscus Extract

Hibiscus sabdariffa (roselle) has been shown to exert multiple health benefits including anti-diabetic, hepato-protective, diuretic, and antibacterial effects.^[7]

The antimicrobial activity of Hibiscus is attributed to its organic acid content. Protocatechuic acid, in particular, has been shown to exert antibacterial action on methicillin-resistant *Staphylococcus aureus* (MRSA), *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Acinetobacter baumannii*^[8], as well as anti-biofilm and antifungal activities against *Candida albicans* in recurrent candiduria.^[9]

In a clinical study evaluating the incidence of UTI in long-term care facilities, the use of hibiscus drink was shown to reduce the overall incidence of UTI



by 36%. It was also shown to exert anti-inflammatory action on the LPS-induced renal inflammation.^[10]

D-Mannose

D-mannose is a naturally occurring simple sugar that is absorbed eight times slower than glucose. When ingested, it is not converted to glycogen or stored in the liver, but instead goes directly to the bloodstream from the upper GI-tract, filtered through the kidneys, and excreted intact in the urine.

D-Mannose works by preventing uropathogenic bacteria, such as E. coli, from binding to the walls of the bladder and urinary tract.

Our bladder walls are lined with various mannosylate proteins (i.e., glycosylated with mannose), which are major binding sites for the uropathogenic E. coli with their surface, finger-like projections called lectins.

Due to the fact that these lectins have a strong affinity to mannose molecules, free D-mannose in the urine can competitively bind to the E.coli surfaces, neutralizing their ability to anchor onto the uroepithelial surfaces. As a result, the bacteria are trapped in the urinary flow and consequently eliminated.^[11]

The effectiveness of D-mannose is highly dose-dependent as the concentration of D-mannose ‘excreted’ in the urine dictates how well the bacteria are neutralized.

In a randomized clinical trial, 308 women with history of recurrent UTI were assigned to three groups: 1) prophylaxis with **2 g D-mannose QD** (n=103), 2) prophylaxis with **50 mg nitrofurantoin QD** (n=103), and 3) no prophylaxis (n=102) for 6 months.^[12]

Both **D-mannose** and nitrofurantoin groups had a

significantly lower risk of recurrent UTIs compared to the no prophylaxis group (**Relative Risk 0.239** and 0.335, respectively; p<0.0001). However, on top of its greater prophylactic efficacy, **D-mannose also resulted in a significantly lower risk of side effects than nitrofurantoin** (Relative Risk 0.276; p<0.0001).

Reference:

1. Urinary Tract Infections. National Kidney Foundation. 2010. Available on: <https://www.kidney.org/sites/default/files/uti.pdf>
2. Sun et al. Cranberry (Vaccinium macrocarpon) oligosaccharides decrease biofilm formation by uropathogenic Escherichia coli. J Funct Foods. 2015; 17:235-242.
3. Kim et al. Synergistic cranberry juice combinations with natural-borne antimicrobials for the eradication of uropathogenic Escherichia coli biofilm within a short time. Lett Appl Microbiol. 2019; 68(4): 321-328.
4. Tao et al. Oral consumption of cranberry juice cocktail inhibits molecular-scale adhesion of clinical uropathogenic Escherichia coli. J Med Food. 2001; 14(7-8): 739-745.
5. Schmidt DR, Sobota AE. An examination of the anti-adherence activity of cranberry juice on urinary and non-urinary bacterial isolates. Microbios. 1988;55:173-81.
6. Stothers L. A randomized trial to evaluate effectiveness and cost effectiveness of naturopathic cranberry products as prophylaxis against urinary tract infection in women. Can J Urol. 2002;9:1558-62.
7. Da-Costa-Rocha et al. Hibiscus sabdariffa L. – a phytochemical and pharmacological review. Food Chemistry. 2014; 165: 424-443.
8. Liu KS, Tsao SM, Yin MC. In vitro antibacterial activity of roselle calyx and protocatechuic acid. Phytotherapy Research. 2005; 19 (11): 942-945.
9. Alshami I, Alharbi AE. Hibiscus sabdariffa extract inhibits in vitro biofilm formation capacity of Candida albicans isolated from recurrent urinary tract infections. Asian Pac J Trop Biomed. 2014; 4(2): 104-108.
10. Chou et al. Exploring the effect and mechanism of Hibiscus sabdariffa on urinary tract infection and experimental renal inflammation. J Ethnopharmacol. 2016; 194: 617-625.
11. Domenici et al. D-mannose: a promising support for acute urinary tract infections in women. A pilot study. Er Rev Med Pharmacol Sci. 2016; 20: 2920-2925.
12. Kranjcec B, Papes D, Altarac S. D-mannose powder for prophylaxis of recurrent urinary tract infections in women: a randomized clinical trial. World J Urol. 2014; 32(1): 79-84.

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