



HMF UTI

PROBIOTIC FORMULA

Probiotic formula with added cranberry extract for UTI support

- Helps prevent recurrent urinary tract infections (UTIs) in women
- Provides 30 billion CFU per day from a combination of five proprietary probiotic strains, including *L. gasseri*
- Includes 500 mg of PACRAN® Cranberry fruit extract daily, equivalent to 25 g of fresh fruit
- Probiotics backed by over 20 years of clinical evidence

HMF UTI is a combination of research-driven probiotics and PACRAN®, a clinically studied cranberry fruit extract that helps prevent recurrent urinary tract infections (UTIs) in women. Approximately 10-20% of women experience one or more incidents of urinary discomfort or UTIs each year, with recurrence rates around 20%.¹ Cranberries are rich in polyphenol antioxidant compounds such as proanthocyanidins, which reduce the adhesiveness of *E. coli* bacteria to the uroepithelial cells that line the bladder.² Regular PACRAN® supplementation has been shown to reduce *E. coli* presence and UTI incidence in women with a history of recurrent infections.^{3,4} HMF UTI also contains five strains of proprietary probiotics that have demonstrated superior adherence to the gut lining and natural resistance to pH and bile acid.⁵ Included in this probiotic blend is *L. gasseri*, one of the predominant vaginal *Lactobacillus* species.⁶



EACH CAPSULE CONTAINS:

Probiotic Consortium	15 billion CFU
<i>Lactobacillus acidophilus</i> (CUL-60, CUL-21)	10 billion CFU
<i>Bifidobacterium animalis</i> subsp. <i>lactis</i> (CUL-34) & <i>Bifidobacterium bifidum</i> (CUL-20)	2.5 billion CFU
<i>Lactobacillus gasseri</i> (CUL-09)	2.5 billion CFU
PACRAN® Cranberry (<i>Vaccinium macrocarpon</i>) Fruit Extract (50:1)	250 mg
	12.5 g Fresh Fruit Equivalent

Non-Medicinal Ingredients: Hypromellose, cellulose, silica, magnesium stearate
PACRAN® is a trademark of Naturex

Recommended Adult Dose: Take two capsules daily, at least two to three hours before or after taking antibiotics, or as recommended by your healthcare practitioner. Use for a minimum of four weeks to see beneficial effects.

Product Size: 60 vegetable capsules

Product Code: 10357

NPN 80066926



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Scientific Rationale:

Urinary tract infections (UTIs) are characterized by clinical signs and symptoms in the genitourinary tract, where the presence of one or more microorganisms exceeds a certain threshold value.¹ UTIs occur when uropathogens colonize the periurethral area, pass into the urethra, adhere to the uroepithelial mucosa, and grow in the normally sterile urinary tract.² UTIs commonly affect the bladder and kidneys, and can result in frequency and pain passing urine, cloudy urine, and back pain.²

E. coli is the principal uropathogen and is responsible for nearly 80% of UTI cases.³ Studies have found that *E. coli* present in the gastrointestinal tract migrates to the urinary tract, where it can cause UTIs.³ As a result, researchers have suggested an important interaction between diet, digestive health and UTI risk.⁴ Although UTIs occur in men, they are 50 times more common in women, likely due to a shorter urethra that may more easily allow bacteria into the bladder.² Approximately 10-20% of women experience one or more UTIs each year, with recurrence rates around 20%.⁴ Recurrent UTIs are defined as two or more episodes over a six-month period or three or more episodes in one year.¹ This can include both relapses (the same organism causes a recurrence of UTI) or re-infection (a new organism causes a recurrence).¹ Other subpopulations at a greater risk for developing UTIs include the elderly, those with spinal cord injuries, catheter users, and pregnant or postmenopausal women.²

Cranberry is the most commonly studied plant for the prevention of UTIs.³ Cranberry decreases UTI frequency by reducing the ability of pathogens to adhere to epithelial cells of the bladder wall.^{2,5} Fibres on bacterial cell walls, known as fimbriae, produce compounds that attach to receptors on uroepithelial cells.² However, cell-culture models have demonstrated that two compounds in cranberries, fructose and proanthocyanidins, each inhibit a different type of *E. coli* fimbriae, thereby reducing the adherence of these cells.² Although proanthocyanidins have both A-type and B-type linkages, only the A-type are associated with decreasing bacterial adherence.² A-type linkages are uniquely found in cranberries, while B-type linkages are present in apples, grapes and dark chocolate.² In vitro research has shown that cranberry can also change the morphology of *E. coli* cells, making them more spherical in shape; in turn, this causes them to be repelled by human cells.³ As these pathogenic cells cannot adhere to urinary epithelial cells, they are unable to infect the mucosal surface of the host's urinary tract.²

PACRAN® Cranberry fruit extract is a clinically researched powder made from whole, proanthocyanidin-rich cranberries. One double blind, placebo-controlled trial evaluated the ability of PACRAN® to reduce the recurrence of UTIs in women. Sixty culture-positive female participants with a history of recurrent UTIs were randomly assigned to one of

three groups: control, low dose cranberry (500 mg of PACRAN® daily) or high dose cranberry (1000 mg of PACRAN® daily). UTI occurrence at baseline and follow-up visits (days 10, 30, 60 and 90) was analyzed by symptom presence and *E. coli* levels in urine samples. After the 90-day supplementation period, both the low and high dose PACRAN® groups reported significantly fewer participants testing positive for *E. coli* when compared to baseline values; no significant change in *E. coli* presence was observed in the placebo group. Similarly, both PACRAN® groups reported symptomatic relief, while no symptomatic changes were reported in the placebo group. Therefore, both doses of PACRAN® reduced the number of culture-positive participants and decreased symptoms in females associated with recurrent UTIs.⁶

Similarly, a six-month, randomized, double-blind, placebo-controlled trial evaluated the ability of PACRAN® to reduce UTI occurrence in women. Participants who experienced at least two symptomatic UTIs in the past 12 months were randomized to consume either placebo or 500 mg of PACRAN® daily for six months. After the completion of the study period, the percentage of women experiencing at least one UTI was significantly lower in the PACRAN® group when compared to the placebo group. A similar finding was observed when the risk of *E. coli* UTI was analyzed. Compared to the placebo group, participants who consumed PACRAN® experienced a significantly longer time to the first UTI and a lower average number of UTIs. Therefore, PACRAN® significantly decreased the risk of UTI in women with a history of recurrent UTIs.⁷

The effectiveness and cost-effectiveness of cranberry products in the prevention of UTIs were evaluated in a randomized, controlled trial. One hundred fifty women who experienced two UTIs the previous year were randomized to one of three groups: placebo juice plus placebo tablets, placebo juice plus cranberry tablets, or cranberry juice plus placebo tablets. Each tablet was taken twice daily and the 250 ml juice was consumed three times daily for one year. When compared to the placebo, supplementation with cranberry juice or tablets significantly decreased the number of participants who experienced at least one symptomatic UTI during the year (20% and 18% respectively, compared to 32% for the placebo). During the year after the study, the average number of UTIs also significantly decreased in the two cranberry groups. The study's authors concluded that both cranberry juice and tablets can be used to reduce UTI frequency. However, the researchers reported that compliance was lowest in the juice group, which dropped below 80% during five of the study months. Overall, the study's authors concluded that cranberry tablets were twice as cost-effective as juice when used for the prevention of UTIs.⁸

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