

The Role of Lactobacilli Probiotics and Cranberry Extract in Vaginal & Urogenital Health

- Probiotics are microorganisms that confer health benefits on the host.
- Most common probiotic bacteria found in the gut are lactobacilli bacteria.
- Safety of probiotics are supported by published studies and EFSA.
- Probiotics supplementation is safe, and even recommended, for infants, children and during pregnancy.
- Probiotics have a wide range of health benefits and modes of action in the body.
- The scientific research supporting the use of probiotics, in new health areas and established health areas, is growing on a weekly basis.

Lactobacilli Probiotics

- Prophylactic on-going daily treatment for long-term use is indicated to PREVENT reoccurring urinary tract infections (UTIs), bacterial vaginosis (BV) and yeast vaginitis
- Long-term co-prescription strategy and/or potential alternative treatment to reduce development of bacterial resistance

Limitations of Conventional Treatment

- E. coli is one of the commonest organisms causing urinary tract infections and the choice of agents to treat these infections is diminishing due to increasing bacterial resistance. (Nicolle LE. A practical guide to the management of complicated urinary tract infection. Drugs 1997; 53: 583-92.)
- As antibiotic resistance is becoming more widespread, prudent use of antimicrobials is imperative
- Antibiotic use may also lead to further undesirable effects, reduced LAB colonisation and numbers, removal of the natural barrier to infection, continued recurrent UTIs and bacterial vaginosis

Oral Consumption of Probiotics

- Added advantage of oral consumption, is preventing the transfer of yeast and pathogenic bacteria from the rectum to the vagina.
- Reid et al: An oral dose of over one billion organisms per day was found to maintain a lactobacilli-dominated vaginal presence. (FEMS Immunology & Medical Microbiology, vol. 32, no. 1, pp. 37- 41, 2001)
 - Reid et al: Randomized, placebo-controlled trial of these subjects showed that the lactobacilli-dominant microbiota was restored in subjects with bacterial vaginosis but not in controls, following 2 months of daily oral intake.(J Med, Food 2004 Summer;7(2):223-8)

Probiotics + Synergistic Nutrients

- Probiotic treatment for vaginal and urogenital infection can be enhanced with synergistic and complimentary molecules
- Ingestion of cranberry (*Vaccinium macrocarpon*) has traditionally been utilised for the prevention of urinary tract infections.
- Cranberries contain high levels of proanthocyanidins (PACs) with a particular A-type linkage which have been implicated as important inhibitors of primarily P-fimbriated *E. coli* adhesion to uroepithelial cells.

Proanthocyanidins (PACs)

- Flavonoid compounds in tannin-rich foods
- Conjugated dimers and trimers of anthocyanidins
- A-type linkages PACs derived from cranberry exhibit superior anti adhesion properties compared to B-type linkages found in PACs from apples, grapes, green tea (Howell AB, et al. *Phytochemistry* 2005;66:2281-91)
- Proanthocyanidins prevent adhesion of pathogenic bacteria in the urogenital system, interfering with the important initial steps of the infection process.

Cranberry Research

Howell et al BMC Infectious Diseases 2010, 10:94- most compelling study to date

Results indicate a significant bacterial (E Coli) anti-adhesion activity in the urinary tract with a daily intake of cranberry extract compared to a placebo

This inhibition is dose-dependent, prolonged (24 hour) protection obtained with the amount of PAC equivalents consumed in each cranberry powder regimen

Showed that cranberry acted against bacterial virulence in patients who took cranberry capsules.

Conclusions: Administration of PAC-standardized cranberry powder at dosages containing 72 mg of PAC per day may offer some protection against bacterial adhesion and virulence in the urinary tract.

(Howell et al. Dosage effect on uropathogenic Escherichia coli anti-adhesion activity in urine following consumption of cranberry powder

standardized for proanthocyanidin content: a multicentric randomized double blind study BMC

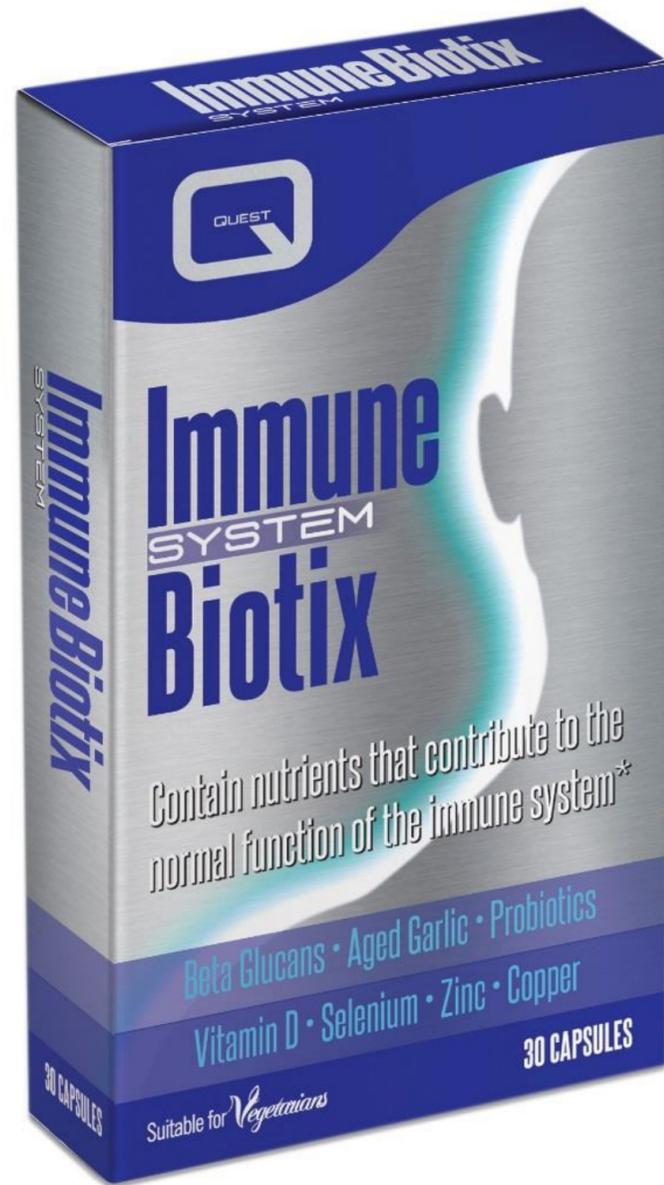
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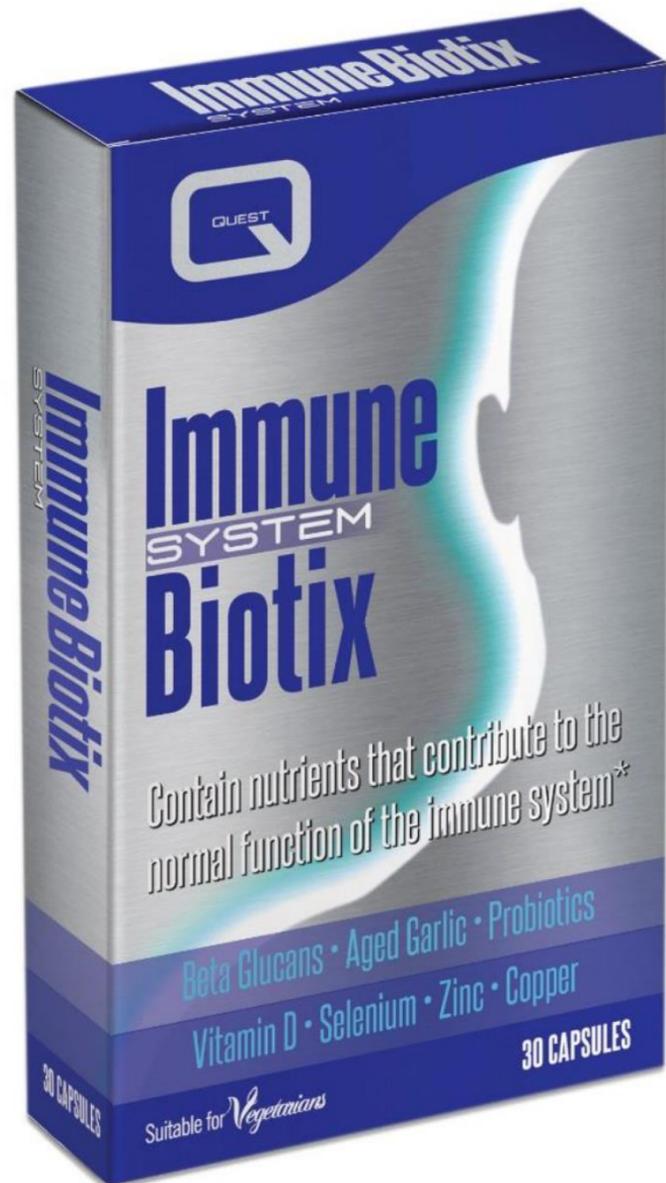
CranBiotix

PRODUCT FEATURES

- A combination of cranberry extract and lactobacillus bacteria
- Supports the health of the urogenital system.
- May be chosen by those who suffer from reoccurring UTIs, bacterial vaginosis and yeast vaginitis
- Supports general gut, bowel, digestive and immune health as an additional benefit.
- Includes maltodextrin, as a prebiotic, to supporting the probiotic activity.
- Delayed release capsule for increased survivability of bacteria
- Suitable for vegetarians and vegans



Immune Biotix System



Immune System Biotix

- A unique combination of beta glucans, aged garlic extract, probiotic bacteria and nutrients to support the immune system.
- Potent support for the immune system and natural bacterial balance in the gut.
- Ideal for those affected with travel, stress, drugs and dietary changes and restrictions.

Immune System Biotix

- Beta glucans in the most active form
 - Aged garlic extract
 - 1000iu of Vitamin D
- Guaranteed minimum potency 2 billion probiotic bacteria
 - Plus Selenium, Zinc and Copper

Beta Glucans

- Exert a potent immunomodulatory action.
 - Known to activate immune cells in the body (J Hematol Oncol.2009 Jun).
- Studies show they may reduce susceptibility to infection by bacteria, viruses, and pathogenic micro organisms. (Curr Opin Clin Nutr Metab Care.2010 Nov;13(6):656-61).
 - Ongoing research into potential anti tumor effects.
- Activity and effectiveness of beta glucans depends on the structure.
- The most active forms contain beta (1-3) and (1-6) linkages as used in Quest Immune System Biotix.

Aged Garlic

- Antioxidant potential developed via ageing process.
- Shown to activate various immune functions to support the body's immune response
(J Nutr 2001; 131:1080S4s and 1075S-9S, J Nutr 2006 Mar 136(3 Suppl):816S-820S).
- Helps to aid body AGE demonstrated antiviral activity may reduce allergic type reactions
(Phytomedicine. 1997 Dec;4(4);335-40).
- Reduces oxidative stress damage to body cells (Dillion SA, Raham K, et al. 2002 J Nutr. 132:168-71).
- Protection of medicine induced side effects (Maldonado P,etal. 2003 Life Sci 73(20):2543-56).

Vitamin D

- Vitamin D contributes to the normal function of the immune system-approved health claim.

- Helps to moderate immune responses appropriately

(Griffin MD, Xing N, Kumar R. Vitamin D and its analogs as regulators of immune system activation and antigen presentation. Annu Rev Nutr. 2003;23:117-145).

- Research shows ensuring adequate levels of vitamin D may offer protection against certain **cancers** (Lappe JM, et al. Am J Clin Nutr 2007;85:1586-1591).

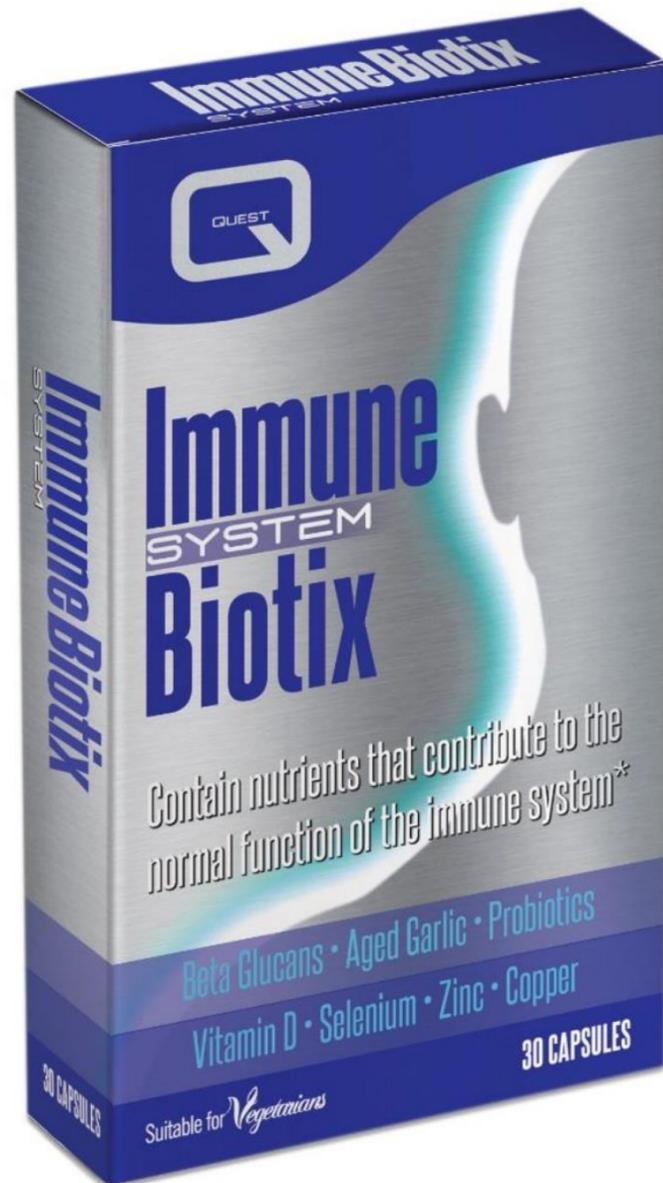
- Vitamin D has shown to exert a positive effect to reduce the incidence of viral and bacteria **infections** (Lee et al, BMC Infect Dis 2004;4:12).

Probiotic Bacteria

- The gastrointestinal system contain a large number of immune cells and compounds with which probiotic bacteria interact and influence.
- Probiotic bacteria activate and regulate immune function and response (J Clin Gastroenterol 2008;42. Suppl 2:591-96).
- Probiotic bacteria detoxify infection-causing toxins produced by pathogens (J Clin Gastroenterol 2006;40:232-234).
- Relevant mode of action for immune modulation, including reducing duration and severity of infections and prevention of allergies.

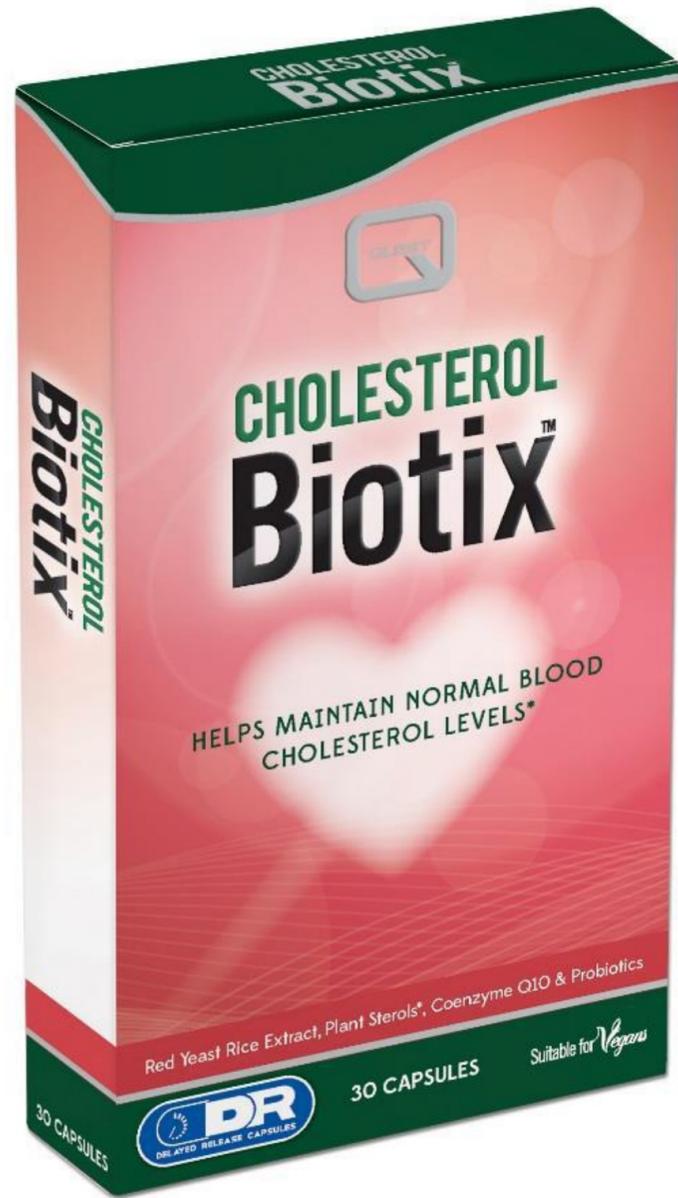
Selenium, Zinc and Copper

- Individually have all been shown to have a positive action to support immunity.
- Approved health claims for each of these minerals for contributing to the normal function of the immune system.

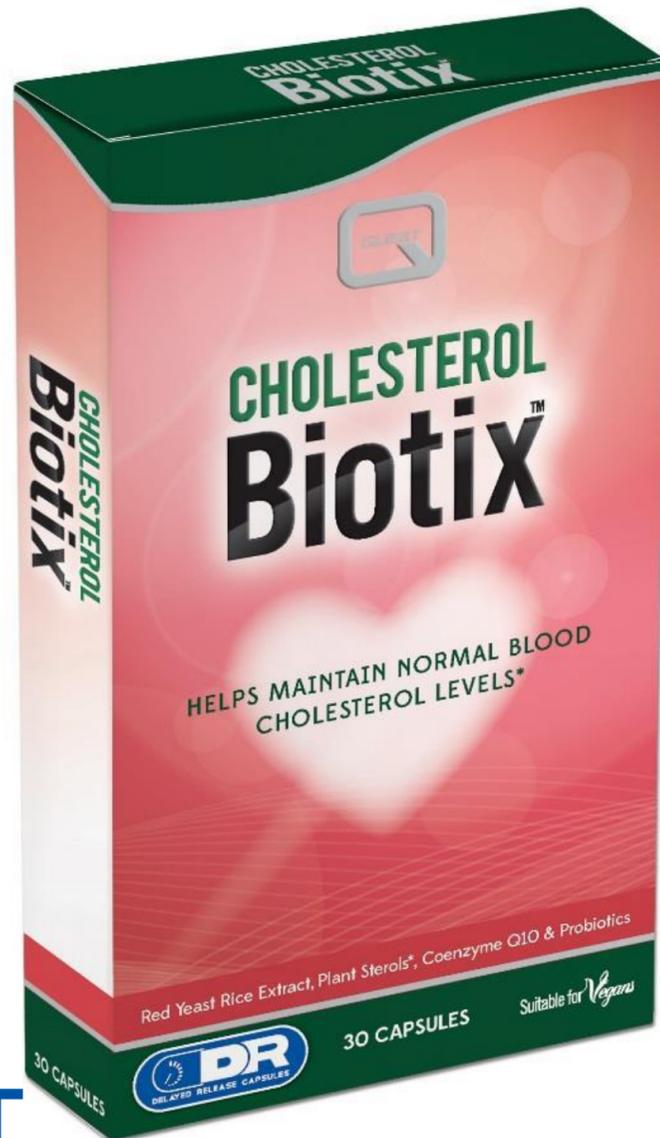


Immune System Biotix

- Beta glucans in the most active form
- Aged garlic extract
- 1000iu of vitamin D
- Guaranteed minimum potency 2 billion probiotic bacteria
- Plus Selenium, Zinc and Copper



Cholesterol Biotix



Cholesterol Biotix

A potent combination of nutrients to support healthy cholesterol levels.

Each capsule contains

- Plant sterols 400mg
- Red yeast rice 115mg
- Co Q10 10mg
- Probiotics 12mg
- (Providing 1 billion organisms)

Suggested dose: 2 capsules daily, with or after a meal

Cholesterol Biotix

- Cholesterol is a waxy, fat-like substance that's found in all cells of the body.
- Used to make hormones, vitamin D and substances that help digest food.
- Can be obtained through the diet and is also synthesized in the body, primarily in the liver.
 - Essential for good health, has a number of vital functions in the liver.
- Essential for good health, has a number of vital functions in the body, including acting as a precursor to steroid hormones such as testosterone and oestrogen.
 - In the liver cholesterol is converted into bile , which is used to emulsify fats and promote their digestion.

Cholesterol

- Cholesterol is fat-soluble, it is transported in the blood in special fat protein complexes known as lipoproteins. Having healthy levels of both types of lipoproteins is important.
- LDL (low density lipoprotein cholesterol) is the major carrier of cholesterol in the blood to the cells. When a cell has an abundance of cholesterol the uptake of cholesterol from LDL is inhibited. Excess LDL molecules in the blood can become oxidized, potentially contributing to the formation of clots on damaged artery walls. LDL is referred to as “bad cholesterol”.
- HDL (high density lipoprotein cholesterol) is the major carrier of cholesterol in the blood to liver. HDL cholesterol returns to the liver, where it is converted to bile acids, thereby reducing cholesterol levels in the body. HDL is referred to as “good cholesterol”.

Plant Sterols

- Plant sterols and stanols are plant-derived compounds similar in structure and function to cholesterol.
- They occur naturally in grains, vegetables, fruits, legumes, nuts, seeds and work by mimicking cholesterol and competing with it for absorption.
- This results in less cholesterol and less bile (a cholesterol bi-product) being absorbed into the body from the gut.
- In order to make more bile, the body uses up more circulating cholesterol, further lowering blood levels of cholesterol.
- Plant sterols/stanols contribute to the maintenance of normal blood and cholesterol levels, clinical trials have demonstrated that daily consumption of foods enriched with a least 0.8g of plant sterols can lower blood LDL cholesterol.

Red Yeast Rice

- Red yeast rice is extracted from rice fermented with a type of yeast called *Monascus purpureus*.
- Red yeast rice contains monacolins, most importantly monacolin K which has been shown to contribute to the maintenance of normal blood cholesterol levels.
- Monacolin K works by inhibiting an enzyme called HMG- CoA reductase, which controls cholesterol production in the liver.
- This is the same action as statin medication widely prescribed to lower cholesterol levels.
- The beneficial effect for red yeast rice on its own is obtained with a daily intake of 10mg of monacolin K from fermented red yeast rice preparations.

Probiotic Bacteria

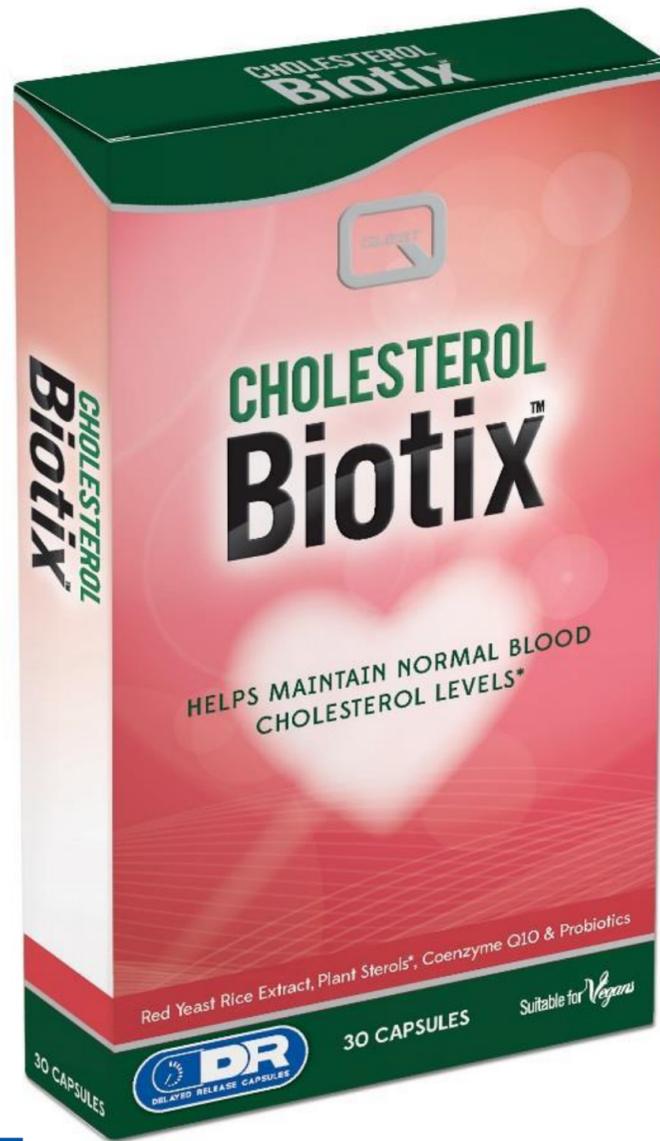
Emerging results suggest that lactobacilli probiotic bacteria may be involved in maintaining normal cholesterol levels by helping to remove it from the body.

The exact cholesterol-lowering mode of action of probiotics is not yet fully understood, potential mechanisms include:

- The inhibition of cholesterol absorption through binding and incorporation of it into the cellular membranes of probiotic bacteria cells.
- The conversion of cholesterol to coprostanol (a non absorbable sterol which is excreted in the faeces).
- Suppression of bile acid reabsorption and increased faecal excretion of deconjugated bile salts.
- The lactobacillus strains L-rhamnosus and L-bulgaricus have so far shown the most promising results for lowering cholesterol.

Coenzyme Q10

- Coenzyme Q10 has antioxidant properties that helps to inhibit the oxidation of LDL cholesterol.
- Supplemental Coenzyme Q10 given to congestive heart failure patients, in conjunction with conventional medical therapy, has demonstrated improvements in measures of cardiac function.
- Coenzyme Q10 has also been shown to improve exercise tolerance patients with cardiovascular disease.
- Statin medication depletes coenzyme Q10 levels in the body leading to myopathy (muscle pain and weakness) and other adverse side effects, therefore supplementation with CoQ10 should be considered for all individuals on statin medication.
- Monacolin K, contained in red yeast rice extract, has the same chemical structure as lovastatin, so has the potential to lower Coenzyme Q10 levels and possibly cause smaller adverse effects.



Cholesterol Biotix

- Unique specialized formula to help maintain normal cholesterol levels
- Multiple modes of action
- Synergistic nutrients for maximum balance and effectiveness
- Combining plant sterols, red yeast rice, CoQ10 and probiotic bacteria
- Delayed release capsules for efficient delivery of ingredients
- Suitable for vegetarians and vegans



Summary of Actions

Plant Sterols

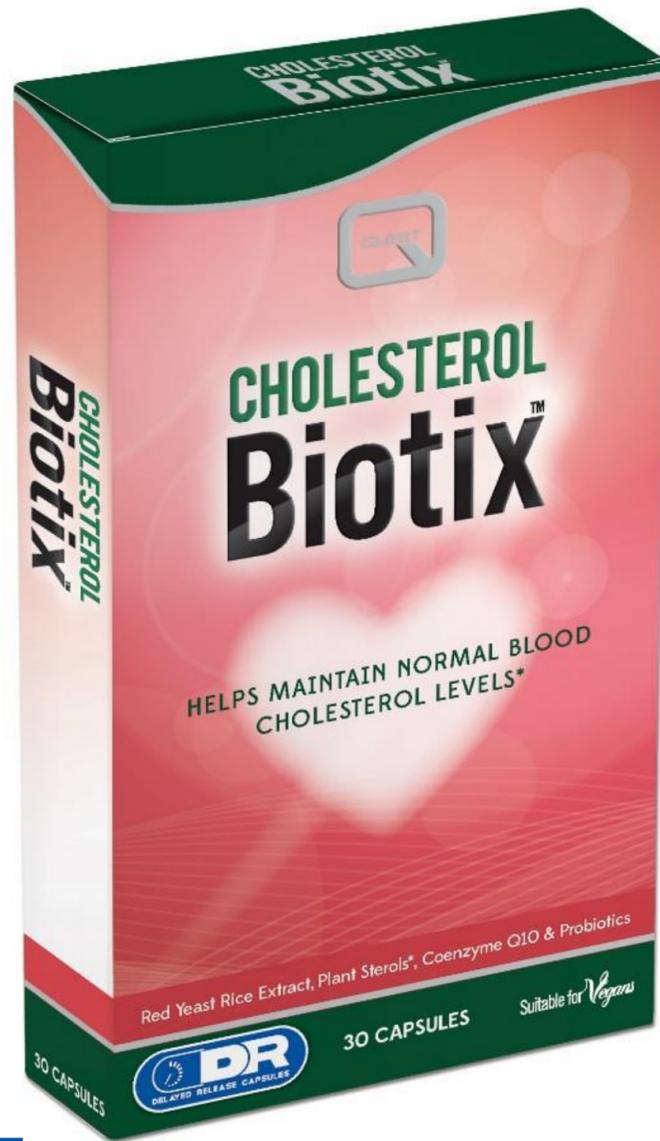
- Inhibits absorption of cholesterol

Red Yeast Rice

- Inhibits production of cholesterol

Probiotic Bacteria

- Help in the metabolism and elimination of cholesterol



Cholesterol Biotix

Could be considered by:

- Those wanting effective support to manage their cholesterol levels.
- Anyone looking to maintain a healthy heart by preventing high cholesterol.
- High cholesterol is a major risk factor in developing a cardiovascular disease.



TumBiotix



TumBiotix

- Promotes general bowel health and regularity
- Includes Maltodextrin, as a prebiotic food source for probiotic bacteria
- Manufactured in-house by Quest. Guaranteed stability, potency and effectiveness
- Targeted two-strain formula, formulated on research for IBS
- Suitable for vegetarians and vegans.



Product Applications

- Targeted combination of L.Acidophilus & L.Plantarum probiotic strains for the management of IBS.
- Reduces the severity, frequency and duration of IBS symptoms including abdominal pain, bloating, flatulence, irregular bowel habit, and alternating diarrhea/constipation.
- Promotes general bowel health & regularity.



IBS Research

- L-plantarum, L-acidophilus and L-rhamnosus are lactic acid producing probiotic bacteria with demonstrated superiority to placebo in reducing pain and flatulence and regulating bowel habits in IBS sufferers.
- The severity score of symptoms significantly decreased in those receiving a combination of L.Plantarum and L.Acidophilus as compared to those receiving a placebo after 14 days, 55.6% versus 8% (Saggiaro A (2004) J Clin Gastroenterol. 38(6 Suppl): 510 4 -6).
- An improvement of all the symptoms of IBS was noted in 95% of patients in the L.Plantarum group versus 15% of patients in the placebo group (Nobaek et al (2000) Am J Gastroenterology 95(5):1231-1238).



Product Features

Quest probiotic strains have tested EFFICACY CHARACTERISTICS to enable them to exert a health benefit including:

- Production of bacteriocins, which prevent harmful microorganisms from establishing in the body.
- Antagonistic characteristics against other types of bacteria. This is what allows a probiotic to squeeze out potentially harmful bacteria.
- Production of digestive enzymes. Conversion of lactose to lactase.



Product Features

- Room stable
- Refrigeration is optional

- BENEFITS INCLUDING:
- Low pH resistance (stable at pH 3)
- Resistance to bile acid
- Resistance to antibiotics