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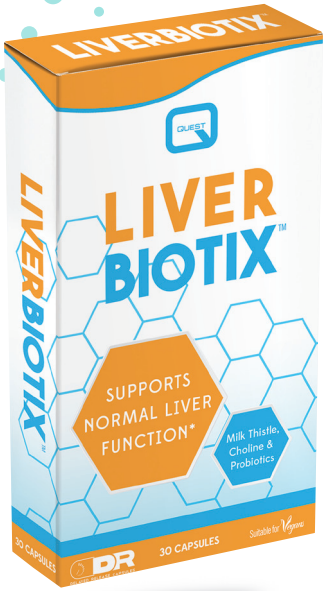
Biotix

LIVERBIOTIX

Specialist formula designed to naturally support liver health and for individuals with fatty liver.



Nutritional Information

One capsule provides:

Choline Bitartrate (Providing 125mg Choline)	305mg
Milk Thistle Fruit Extract (Providing 150mg Silymarin)	215mg
Lactobacilli Culture‡ (Providing 1 billion (1×10^9) L.rhamnosus, L.plantarum, L.bulgaricus)	19mg

One capsule daily with or after a meal. Swallow with water.

SUMMARY

- A unique triple combination of herbal extract, essential nutrient and probiotic for targeted liver support.
- Silymarin from milk thistle for phase 2 liver detoxification and hepaprotective properties.
- Choline, a key nutrient for normal metabolism and lipid transportation in the body.

DESCRIPTION

LiverBiotix is a unique therapeutic supplement to support liver health, liver detoxification and non-alcoholic fatty liver disease (NAFLD). LiverBiotix combines herbal extract, micronutrients and probiotic bacteria for a research based approach to liver health.

Milk thistle fruit extract containing a therapeutic dose of silymarin supports phase 2 liver detox pathways and has traditionally established liver protective properties. Choline , an essential nutrient for detoxification and removing fat away from the liver is often found to be deficient in people with NAFLD. Lactobacilli probiotic bacteria, specifically L.rhamnosus, L.plantarum and L.bulgaricus increase the breakdown of fat in the liver, and decrease the formation of new fat deposits in the liver.

HOW DOES LIVERBIOTIX SUPPORT LIVER DETOXIFICATION AND NON-ALCOHOLIC FATTY LIVER DISEASE?

Silymarin

Decreasing liver enzymes: The active agent in milk thistle - Silymarin has been shown to decrease the liver enzymes Alanine transaminase (ALT) and Aspartate transaminase (AST). These enzymes when high, indicate damage or distress of the liver cells. NAFLD is the most common cause of elevated liver enzymes[1].

Reducing fat accumulation: Silymarin reduces fat accumulation in liver cells (intrahepatic). It also repairs the liver by stimulating liver protein synthesis[2], an essential action in NAFLD recovery.

Hepatoprotective: Silymarin is a hepatoprotective agent during detoxification, protecting cells from further damage as toxins are being eliminated from the body tissues[3]. Any released toxins from tissues will have to go back through the liver before being processed and excreted. Another mode of action of silymarin is the slowing down phase 1 liver detoxification and the speeding up of phase 2 detox pathways, which avoids a back log of unbound toxins in the body.

Anti-inflammatory: Studies confirm the benefits and the anti-inflammatory and T cell-modulating effects of silymarin. A recent review looked at 60 research papers and confirmed the multiple therapeutic actions of Milk Thistle and Silymarin on fatty liver disease and inflammation[4]. Silymarin inhibits inflammation in the liver by inhibiting the synthesis of the inflammatory markers leukotrienes[5]. NAFLD is characterised by chronic portal inflammation[6], which can lead to hepatic hypertension and potentially life threatening complications[15].

Choline

Mitochondrial membranes: Choline is part of the B vitamin family and needed for the cell mitochondrial membrane. Research has demonstrated that low dietary intake of choline is associated with NAFLD[4], this is because choline deficiency alters mitochondrial membranes and can lead to mitochondrial dysfunction, a major cause of NAFLD. In one animal study, a choline deficient diet caused progressive liver damage ranging from simple steatosis to non-alcoholic steatohepatitis (NASH), advanced fibrosis and cirrhosis, all conditions of fatty liver[7].

Cholesterol: Choline is used for forming very low-density lipoprotein (VLDL) which is required for the transportation and removal of fatty deposits from the liver and into the cells. Choline is stored and metabolised in the liver, and used for the solubilization and secretion of bile salts, which is made using cholesterol[7].

Methyl donor: Choline, a methyl donor supports methylation, which is an essential part of phase 2 liver detoxification. Methylation, and therefore liver detoxification can be inhibited by toxins that have been built up previously, including toxic metals such as lead and mercury. Sometimes it is necessary to support methylation by providing the body with an abundance of methyl donors such as choline. Methyl donors can help to clear out stored toxins, making the body's natural methylation and liver detoxification process more effective.

Lactobacillus probiotic bacteria

LiverBiotix contains 3 strains of evidence based Lactobacillus including L. ramnosus, L. plantarum and L. bulgaricus, all of which decrease liver fat creation (lipogenesis) and increases liver fat degradation (lipolysis).

Intestinal bacterial interactions play diverse roles in the progression of NAFLD, and decreased concentrations of beneficial bacteria are observed in patients with reduced liver function[8]. Decreased concentrations of beneficial bacteria lead to a decrease in detoxification capacity of the liver.

Conjugation: In phase 2 liver detoxification, toxins are bound to an amino acid in a process called conjugation, so that they can be removed from the body. Some pathogenic bacteria, which are allowed to grow in the absence of probiotic bacteria, produce an enzyme called beta glucuronidase. This enzyme causes the toxins to be removed from their amino acids in a process called deconjugation. These free toxins then have to go back through the liver to be reprocessed, increasing the burden on the liver, and increasing the toxic build up within the liver. Increasing probiotic concentrations within the gut decreases beta glucuronidase, and allows detoxification to work effectively.

Short chain fatty acids: Probiotics, conduct many important roles in the body. Probiotics form a large part of the microbial barrier that lines the gut. Lactobacilli produce short chain fatty acids (SCFA) needed for gut health, which consist of Acetate, Propionate and Butyrate. Butyrate is an important SCFA for maintaining the lining of the gut. SCFA help to regulate the integrity of the gut barrier. Propionate is a SCFA that inhibits the creation of fat and cholesterol. Studies indicate that propionate alone is able to reduce visceral fat (deep abdominal fat) and liver fat. Acetate SCFA stimulates the secretion of leptin, a hormone which helps to regulate appetite, leading to decreased body fat. In fatty liver disease, fatty acids from body fat contribute to newly synthesized liver fat[9]. Bacterial metabolites such as SCFA and bile acids are involved in normal liver function and also a reduction in the creation of liver fat and inflammation, a key factor in NAFLD[7]. High cholesterol is one of the main causes of NAFLD, and a reduction in cholesterol should be a primary therapeutic aim in the treatment of NDFLD[8].

Anti-inflammatory: Probiotics reduce an enzyme called liver aminotransferase which is indicative of reduced liver inflammation, and inhibits insulin resistance and the inflammation marker Tumour Necrosis factor (TNF-α)[12].

Cholesterol: Lactobacilli belong to a classification of bacteria called bile salt hydrolase active bacteria. This means that they metabolise bile so that it is excreted rather than recycled. Since bile is made using cholesterol, a constant demand on the body for fresh bile reduces cholesterol stores[13].

L.plantarum: L.plantarum has been shown to improve liver function, oxidative stress and lipid metabolism in animal models with non-alcoholic fatty liver disease, and provides a promising treatment in humans. Human studies have also suggested that a dysbiosis exists in Non-alcoholic fatty liver disease patients[6]. A placebo controlled study demonstrated the cholesterol lowering efficacy of L.plantarum[10].

L.rhamnosus: L.rhamnosus has been shown to have anti-obesity effects in animal models. Obesity reduction is an essential part of reducing fatty deposits in the liver[11].

L. bulgaricus: L. bulgaricus alters gut flora towards protective organisms and increases gut barrier function, which supports detoxification[13].

WHAT ARE DRCAPS AND WHY ARE THEY NECESSARY?

DRcaps (Delayed Releasing Capsules) are designed to delay the release of probiotic bacteria, protecting the probiotics from the stomach acidity and allowing probiotics to be most effective where they need to be–directly in the intestines.

HOW SHOULD LIVERBIOTIX BE TAKEN

One capsule daily with or after a meal.

ARE THERE ANY PRECAUTIONS BEFORE OR WHILE TAKING LIVERBIOTIX?

This product is intended exclusively for people wanting to support liver detoxification and fatty liver conditions such as Non-alcoholic fatty liver disease and is not suitable for:

- Pregnant and breastfeeding woman;
- Children.

Caution is required if you are being treated for Diabetes mellitus type 2. Medication may need to be adjusted.

Consult your Doctor before using with any of the following medication; RALOXIFENE (Evista), SIROLIMUS (Rapamune), TAMOXIFEN (Nolvadex).

FEATURES

- Lyophilised, encapsulated and individually sealed to enhance stability.
- DRcaps for increased probiotic survival.

HEALTH NEEDS

DETOX AND CELL PROTECTION

SPECIALIST HEALTH

SCIENTIFIC REFERENCES

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