Graminex G63™ Flower Pollen Extract for Hepatotoxicity of the Liver

Made in USA
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Hepatotoxicity:
Hepatotoxicity is damage that occurs to the liver due to the toxic buildup of harmful elements in the body. This damage can cause normal liver functions to decrease or become irregular. The primary function of the liver is to act as a site for the transformation of foreign substances and toxic chemicals into less harmful compounds. This allows them to be easily eliminated from the body. Different metabolic processes that complete these chemical transformations make it possible to reduce fat solubility and change the biological activity of toxic compounds. By converting toxins to inactive water soluble chemicals, the liver prevents them from being deposited and accumulated in the body’s fatty tissues. The neutralized water soluble chemicals can then be eliminated from the body via the urine or bile. The liver completes this process for both endogenous substances, which originate from within the body (e.g. cholesterol or proteins) and exogenous substances, which originate from outside the body (e.g. chemicals or drugs). Because the liver is a major site for these transformations, it is extremely susceptible to drug induced injury, both from pharmaceuticals and over-the-counter (OTCs) medications.

Certain blood tests may be performed to determine if the liver is functioning properly. One of the most common is a blood test for bilirubin. Bilirubin is formed when the liver breaks down red blood cells prior to excretion in the bile. Elevated levels in the bloodstream indicate that the liver is not excreting bile normally. Blood tests may also be done to measure various enzymes that are known indicators for hepatotoxicity and liver damage. There are four common enzymes that when elevated indicate some sort of liver damage has occurred. These include alanine aminotransferase, aspartate aminotransferase, lactate dehydrogenase and alkaline phosphatase.¹

Causes of Hepatotoxicity:
Common hepatotoxins that cause liver damage include alcohols, OTC pain relievers, prescription medications, certain herbs and industrial chemicals. Among these hepatotoxins, drug induced liver damage accounts for 50% of all acute liver failures.² Depending on the hepatotoxin, different forms of damage may occur including zonal necrosis, hepatitis, cholestasis, granulomas and neoplasms. Based on the level of severity in the different damage types and the magnitude of disturbances on liver functions, large concentrations of hepatotoxins ultimately cause acute liver failure. To clinically test for liver damage, a number of biochemical markers are analyzed as indicators. These biochemical markers are able to quantitatively demonstrate a direct correlation with the amount of damage present in the liver.

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G63™ Flower Pollen Extract Facts:
- Non-solvent extracted
- 100% manufactured in USA
- Standardized full spectrum formula
- Clinically supported for safety and efficacy
- cGMP, Kosher, Pareve, Halal and Organic Processing Certified

Alternative Medicine:
Flower pollen extract is a standardized extract that has been used historically for over 50 years for various health indications. The product is supported by a substantial amount of open, placebo-controlled and double-blind clinical trials. Flower pollen extract has been demonstrated to be effective, safe and without harmful side effects.

In these studies flower pollen extract is produced using a combination of unique growing and processing techniques. The raw pollen grains are harvested mechanically from the fields and are further processed to remove any plant material to isolate the pure pollen. Once in pure form, the pollen is extracted to remove the outer shell so the internal nutrients can be released. This extraction process is being done without the use of solvents by Graminex® in the United States. During extraction, the outer shells of the pollen grains along with the allergens are discarded, leaving only the internal nutrients behind. Throughout this process substances that are toxic or harmful, like allergens and other
Graminex G63™ Flower Pollen Extract for Hepatotoxicity of the Liver

Grain molecules, are broken down and eliminated. The final product contains a synergistic formula of the natural and complete nutrition factors that are necessary to generate new life. This unique extract has been shown to help act as an effective liver protecting agent against external factors, including various hepatotoxins that cause liver damage.

Chemical Composition of Flower Pollen Extract:
The pollen grains used to manufacture G63™ Flower Pollen Extract contain a complete profile of nutrients vital for human health. Included in the chemical composition are a variety of vitamins, carotenoids, minerals, amino acids, enzymes, lipids, fatty acids, prostaglandins, phytosterols, hydrocarbons and flavonoids. G63™ Flower Pollen Extract is a standardized product that meets the exact specifications for phytosterol and amino acid content for every batch. It is manufactured using a combination of the water soluble, G60™ Flower Pollen Extract, and the lipid soluble, GFX™ Flower Pollen Extract, portions of the pollen grain. G60™ contains a standardized portion of amino acids and GFX™ contains a standardized portion of phytosterols. These two ingredients are blended into a 20:1 ratio to create a standardized, pharmaceutical grade powder. The unique chemical composition of the G63™ Flower Pollen Extract formula has been extensively studied for both safety and efficacy in the published literature. In addition to this G63™ Flower Pollen Extract has undergone complete toxicology studies.

Efficacy:
There are several clinical studies that have demonstrated Flower pollen extract having beneficial effects in the event of contact with hepatotoxins. These studies have established the flower pollen extract’s ability to help protect from damage or reduce damage to the liver. In a course of paracetamol intoxication biochemical indicators of flower pollen extract treatment were effective in reducing overall liver damage. In a human trial, G63™ Flower Pollen Extract was administered without side effects in addition to each patient experiencing some form of improvement.

Ammonium Fluoride
A common hepatotoxin standard that is used in clinical studies for liver damage is ammonium fluoride. Ammonium fluoride is a compound that is used for etching glass, preserving wood and in printing and dying textiles. Prolonged exposure to this compound causes destruction of the liver’s functional units or lobules and an excessive accumulation of extracellular matrix proteins, characterized as liver fibrosis. Two studies have been completed demonstrating the benefits of flower pollen extracts on the liver after prolonged ammonium fluoride exposure. One of the studies conducted applied the flower pollen extract simultaneously with the ammonium fluoride. This study found that when the flower pollen extract was administered at the same time as the intoxication, damage to the liver practically did not occur. There was a substantial reduction in the negative activity of the toxin and it helped stop the development of negative changes within the liver tissue.

A second study with ammonium fluoride collected data on the biochemical indicators aminotransferase, alkaline phosphatase, cholineres and bilirubin. It was demonstrated that under intoxication with ammonium fluoride alone, there was a rise in the activity of aminotransferases and alkaline phosphatase with a decrease in cholinesterase. There was also a rise in the bilirubin levels tested in the blood serum, providing evidence that there was liver damage occurring from exposure to ammonium fluoride. A prophylactic application of flower pollen extract after exposure was able to help normalize the enzymatic activity of the biochemical indicators and lower total bilirubin levels. This demonstrated flower pollen extract’s beneficial effect on the liver and its efficacy at normalizing liver functions post exposure.

Paracetamol
Another common hepatotoxin is paracetamol, or acetaminophen, a commonly used OTC analgesic. In large doses paracetamol causes severe hepatic necrosis that leads to acute liver failure. Paracetamol toxicity far exceeds all other causes of acute liver failure in the United States. During the course of paracetamol intoxication biochemical indicators respond as previously mentioned with the addition of a marked decrease in glutathione. Glutathione is a natural antioxidant that is present in the liver. It plays a protective role in preventing liver damage from occurring. Levels of glutathione are often measured as an indicator for liver damage through a simple blood test.
When flower pollen extract was administered therapeutically, the survival rate of the animals was increased, glutathione levels were increased and on physical examination, the hepatic lesions were decreased. The role of glutathione was found to be significant for the mechanism of action of the flower pollen extract in protecting the liver. An additional study also indicated the normalization of biochemical indicators linked to necrotic changes that occur in hepatic cells. In reference to paracetamol toxicity, these studies clearly display the hepatoprotective effects of the flower pollen extract.

Other hepatotoxins

Other studies that have been conducted using flower pollen extract for liver support have used allyl alcohol and galactosamine. Study designs that looked at allyl alcohol intoxication involved the application of flower pollen extract after intoxication as a therapeutic agent. Ongoing monitoring of the changes in biochemical markers was done to observe possible therapeutic effects. Two studies showed flower pollen extract having a significant beneficial effect on the blood serum levels of biochemical indicators associated with allyl alcohol intoxication including aminotransferase, alkaline phosphatase, and bilirubin.

Additional studies were conducted with galactosamine, a known hepatitis inducer, commonly used in liver damage research. In these studies flower pollen extracts helped bring about a rapid, significant reversion to normal or almost normal aminotransferases and alkaline phosphatase activity as well as normal bilirubin levels. This indicates much of the damage caused by galactosamine in the liver was prevented. Various other studies have been completed showing flower pollen extract’s hepatoprotective effect on the liver under intoxications with different organic solvents and toxic compounds.

G63™ Flower Pollen Extract Dosage

Flower pollen extract is supported by over 100 clinical studies for various applications. These studies demonstrate the effectiveness of the product at varying dosages. Primary research as a pharmaceutical treatment has been conducted using a dose of 1500 mg/day. Independent clinicals conducted have used a range of 500-1500 mg/day. (Table 1)

<table>
<thead>
<tr>
<th></th>
<th>G63™</th>
<th>G60™</th>
<th>GFX™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceutical level dose</td>
<td>1500 mg/day</td>
<td>360 mg/day</td>
<td>18 mg/day</td>
</tr>
<tr>
<td>Average scientifically supported dose</td>
<td>1000 mg/day</td>
<td>240 mg/day</td>
<td>12 mg/day</td>
</tr>
<tr>
<td>Minimum scientifically supported dose</td>
<td>500 mg/day</td>
<td>120 mg/day</td>
<td>6 mg/day</td>
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Table 1: Recommended daily dosages.

Conclusion

Flower pollen extract has been used historically for a variety of health indications including liver support. The unique growing, manufacturing process and standardization methods used by Graminex provide a flower pollen extract raw ingredient that is superior to normal botanical extracts and bee pollen products on the market. Natural actives found in each batch of G63™ Flower Pollen Extract are the same each and every time it is manufactured to supply a pharmaceutical grade raw material.

There is evidence in all of these clinical studies that supports the use of flower pollen extract as a hepatoprotective substance both therapeutically and prophylactically, especially when dealing with various intoxications with hepatotoxins. It has been demonstrated in primary and secondary literature that flower pollen extract can effectively help normalize biochemical indicators and enzymatic activity associated with hepatotoxicity as well as help to reduce hepatic lesions and liver damage. As a natural botanical extract, G63™ Flower Pollen Extract may be used in combination with other substances known as liver protecting agents to help reduce the effects of hepatotoxins on the liver.

In addition to these efficacy studies, Graminex has also conducted complete acute oral and acute dermal toxicity studies in addition to the LD50, to demonstrate that the product is nontoxic and considered safe. The addition of G63™ Flower Pollen Extract to a quality product formulated for liver support will prove effective for both the manufacturers and end users. G63™ Flower Pollen Extract is available as a bulk powdered ingredient as well as in a variety of private labeled products.
<table>
<thead>
<tr>
<th>Hepatotoxin</th>
<th>Application Method</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Fluoride</td>
<td>Prophylactic</td>
<td>1. Damage to the liver practically did not occur.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Prevented negative liver changes from occurring.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Normalized the disorder involving enzymatic and lipid parameters.</td>
</tr>
<tr>
<td>Paracetamol</td>
<td>Prophylactic</td>
<td>1. Increased the survival rate of animals.</td>
</tr>
<tr>
<td></td>
<td>Therapeutic</td>
<td>2. Decreased hepatic lesions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Hepatoprotective effects displayed by normalization of biochemical indicators associated with necrotic changes.</td>
</tr>
<tr>
<td>Allyl Alcohol</td>
<td>Therapeutic</td>
<td>1. Significantly reduced serum enzyme elevations induce by intoxication.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Reduced damage to the liver.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Normalized the activity of transaminase, phosphatase and bilirubin.</td>
</tr>
<tr>
<td>Galactosamine</td>
<td>Prophylactic</td>
<td>1. Prevented much of the damage actually caused by intoxication.</td>
</tr>
<tr>
<td></td>
<td>Therapeutic</td>
<td>2. Showed a rapid, significant reversion to normal or almost normal aminotransferase and alkaline phosphatase activity, as well as the bilirubin level.</td>
</tr>
<tr>
<td>Ethionine</td>
<td>Prophylactic</td>
<td>1. May be used for effective protection of liver cells from toxic actions.</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>Therapeutic</td>
<td>1. Mitigated damage to the liver.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Marked lowering of bilirubin levels in the blood serum and diminution of liver weight.</td>
</tr>
<tr>
<td>Organic Solvents</td>
<td>Prophylactic</td>
<td>1. Normalized impairments affecting the enzymatic and lipid parameters.</td>
</tr>
<tr>
<td>Testosterone</td>
<td>Therapeutic</td>
<td>1. Normalized biochemical indicators of necrotic changes, testifying to the hepatoprotective effects on hepatic cells.</td>
</tr>
</tbody>
</table>

Table 2: Summary of the clinical findings for Flower Pollen Extract with different hepatotoxins.
References:


