

**THE ROLE OF HAELAN 851®**  
**NUTRITION IN PROTECTING THE LIVER**

**INTRODUCTION**

Hepatomegaly is the abnormal enlargement of the liver that is usually a sign of liver disease. It is often discovered by percussion and palpation as part of a physical examination: the liver is easily palpable below the ribs and is tender to the touch. Hepatomegaly may be caused by hepatitis or other infection, fatty infiltration, as in alcoholism, biliary obstruction, or malignancy.

Serum glutamic pyruvic transaminase (SGPT), a catalytic enzyme normally found in high concentration in the liver, increases above normal levels in the serum when there is liver damage. The rise in serum SGPT levels and the weight of the livers were used as criteria in evaluating the results of this nutritional study.

The degree of protection the Haelan 851, Platinum Formula, oral nutritional beverage had on protecting the liver from enlargement and the increase in serum SGPT, when liver poisoning is induced by thioacetamide (TAA), a carcinogenic factor produced in the liver, is shown in Table I and Table II.

**METHODS AND MATERIALS**

Sixty ICR breed male mice, fasting for over eight hours, with a body weight ranging between 21 to 23 grams were divided at random into six groups of ten mice each. The first three groups were given Haelan 851, Platinum Formula, nutritional oral beverage diluted with water to the concentrations of 75%, 50% and 33% respectively instead of clean water for drinking by the mice. On the 7th day, TAA at 80mg/kg was injected intraperitoneally. For the fourth group, diisoprophylamine at 80mg/kg was injected intraperiotoneally once on the 5th day and the 6th day of the experiment respectively and, in addition, TAA was injected intraperitoneally at the dose of 80mg/kg on the 7th day as the positive medical control treatment. For the fifth group intraperitoneal injection of TAA at 80mg/kg was done on the 7th day of the experiment as the negative control. For the sixth group normal saline at 0.1 ml/kg was injected into the abdomen cavity on the 7th day of the experiment as the blank control.

After poisoning of TAA for 1.4 hours, the mice were killed by dislocation of the cervical vertebrae and the liver was extracted to calculate the proportion of it to the total body weight. The result was sent for chi square analysis. The serum was separated and the level of serum transaminase in mice of different groups was tested based on the microdetermination of SGPT recorded in the Industrial Toxicology reference book. The OD value of the 721 spectrophotometer was considered as the index to carry on analysis. The result of the tests are shown in Table I and Table II.

**Table I**  
**Effect of Haelan 851, Platinum Formula , Oral Liquid Beverage,**  
**nutrition on the Rise of Serum SGPT in Mice**  
**with Liver Poisoning Induced by TAA**

<u>Group</u>	<u>No. Mice</u>	<u>Medication &amp; Nutrition</u>	<u>OD Value (X + SD)</u>	<u>P Value*</u>
1	10	75% Haelan Platinum Formula + TAA	0.705 ± 0.107	<0.001
2	10	50% Haelan Platinum Formula + TAA	0.764 ± 0.078	<0.001
3	10	30% Haelan Platinum Formula + TAA	0.847 ± 0.073	<0.001
4	10	Diisoprophylamine + TAA	0.728 ± 0.091	<0.001
5	10	TAA	0.935 ± 0.032	<0.001
6	10	Normal Saline	0.318 ± 0.014	<0.001

\* In comparison with the fifty group

Note: Thioacetamide (TAA) is a toxic substance of the liver, which is also one of the carcinogenic factors. Reference: D. Harvey, et al, Aldrich 1988-1989, p 1425, Aldrich Chemical Co., Inc.

**Table II**  
**Effect of Haelan 851, Platinum Formula, Oral Liquid Beverage,**  
**Nutrition On Hepatomegaly Of Mice Induced by TAA**

<u>Group</u>	<u>No. Mice</u>	<u>Medication &amp; Nutrition</u>	<u>Weight of Liver (g) /Body weight(g)x100% (%. X + SD)</u>	<u>Value*</u>
1	10	75% Haelan Platinum Formula + TAA	5.825 ± 0.59	<0.001
2	10	50% Haelan Platinum Formula + TAA	6.181 ± 0.71	<0.001
3	10	30% Haelan Platinum Formula + TAA	6.323 ± 0.942	<0.001
4	10	Diisoprophylamine + TAA	6.18 ± 0.514	<0.001
5	10	TAA	7.38 ± 0.338	<0.001
6	10	Normal Saline	6.23 ± 0.358	<0.001

\* In comparison with the fifty group

Note: Thioacetamide (TAA) is a toxic substance of the liver, which is also one of the carcinogenic factors. Reference: D. Harvey, et al, Aldrich 1988-1989, p 1425, Aldrich Chemical Co., Inc.

### SUMMARY

Table I shows that 33 to 75% diluted Haelan 851, Platinum Formula, oral nutritional beverage can markedly prevent the rise of serum SGPT in mice with liver poison induced by thioacetamide (TAA). The effect in groups given 50% and 75% diluted solutions is similar to that in the group given diisoprophylamine (P<0.03 and 0.4 respectively).

Tables I and II demonstrate that the Haelan 851, Platinum Formula, oral nutritional beverage possesses comparatively marked inhibiting effect on the rise of serum SGPT and hepatomegaly induced by thioacetamide (TAA). The results are similar to that of medical control group administered diisoprophylamine ascorbate (80 mg/kg ip). or even better.