

Nature's gift for mankind.....

# Pure Ceylon Cinnamon Nutraceutical Capsule



By ITI Herbal Technology Section



**CEYLON CINNAMON  
NUTRACEUTICAL CAPSULE**

Ceylon cinnamon capsule is one of the best nutraceuticals for the reduction of blood sugar and cholesterol level in human body. The product is in easy to use capsule form and it can be in cooperated in black tea or milk tea due to hot water solubility. Manufacturing of this product can be done by reusing of Ceylon Cinnamon feathering or chips used for essential oil production. Free of fat or essential oil and nontoxic due to absence of Coumarin

**TECHNOLOGY OVERVIEW**

The product is developed by using Ceylon cinnamon, (Cinnamomum zeylanicum Blume) as the raw material. This particular product is not just the powdered cinnamon; it is the dried extract of quality cinnamon quills which does not have coumarin traces which toxic to human. Also it contains mainly procyanidins which is responsible for blood sugar lowering and cholesterol lowering effects. The product is standardized for tannin content and proven for the free of side effects by clinical trials carried out on healthy volunteers as well as diabetic patients. The technology is ready for transfer with the clinical trial data

**INDUSTRIAL TECHNOLOGY INSTITUTE**



Clinical & Health Supplement Data

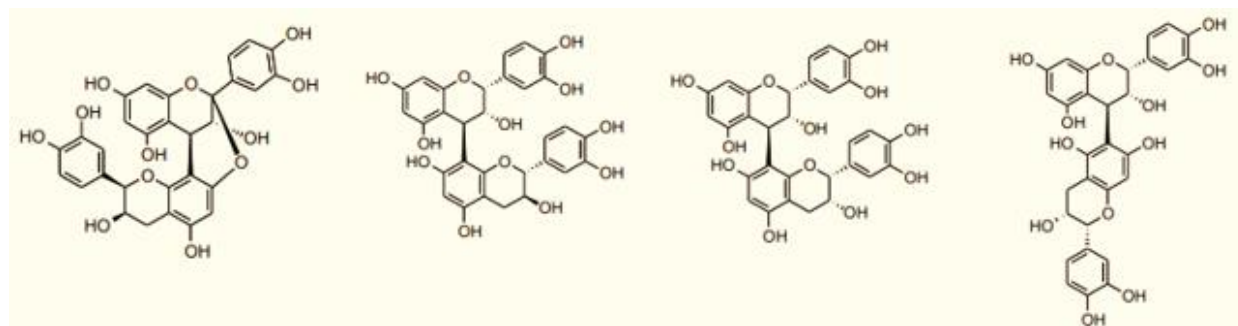
## Manufacturing Process

Organically cultivated Pure Ceylon Cinnamon is obtained from its native regions in Southern Sri Lanka and the outer bark of the cinnamon stem is obtained through the traditional authentic peeling process used for many centuries by cinnamon peeling communities in ancient Ceylon.

After withering, the outer bark is subject to hydro distillation, and cinnamon bark oil is removed. The remaining hydro-distillate is refluxed at 100°C for 1h and the water extract is obtained in a GMP certified multipurpose extraction facility.

The water in the hot water extract is then slowly removed under vacuum and lyophilized to obtain dry crude tannin-rich cinnamon extract and is capsuled for nutraceutical purposes using a tailormade capsule formula<sup>1</sup> rich in Insulin-mimetic Procyanidins.<sup>2,3</sup>

## Cinnamon Procyanidins



## Dosage

Each 500mg capsule contains:

- Standardized *Cinnamomum zeylanicum* extract
- Sodium stearate
- Magnesium silicate
- Plant gelatin

Recommended Dose: Two 500mg capsules per day

## Clinical Observations<sup>4,5,6,7,8</sup>

- ∞ Reduces Blood Glucose
- ∞ Reduces HbA1c
- ∞ Reduces Total Cholesterol
- ∞ Reduces LDL Cholesterol
- ∞ Maintain Healthy HDL Cholesterol
- ∞ Liver and Kidney functions remain normal

Results of Clinical Trial Phase II/III<sup>4</sup>**Cinnamon phase II/III clinical trial – Glycaemic control in the cinnamon and placebo groups**

	Mean ( $\pm$ SD)				
	Visit 0 (Baseline)(n=210)	Visit 1 (1 month)(n=199)	Visit 2 (2 months)(n=195)	Visit 3 (3 months)(n=188)	Visit 4 (4 months)(n=186)
<b>Fasting Plasma Glucose (mg/dl)</b>					
<b>Placebo</b>	129.5 ( $\pm$ 50.6)	127.4 ( $\pm$ 53.4)	128.3 ( $\pm$ 40.3)	128.6 ( $\pm$ 51.1)	130.4 ( $\pm$ 52.2)
<b>Cinnamon 250</b>	136.3 ( $\pm$ 56.9) <sup>*#</sup>	137.6 ( $\pm$ 52.4)	132.8 ( $\pm$ 55.5)	119.9 ( $\pm$ 44.9) <sup>*</sup>	121.8 ( $\pm$ 48.4) <sup>#</sup>
<b>Cinnamon 500</b>	136.5 ( $\pm$ 54.8) <sup>*#</sup>	131.1 ( $\pm$ 50.1)	131.5 ( $\pm$ 57.1)	121.5 ( $\pm$ 40.5) <sup>*</sup>	120.2 ( $\pm$ 45.2) <sup>#</sup>
<b>HbA1c (%)</b>					
<b>Placebo</b>	8.0 ( $\pm$ 1.7)	NM	8.1( $\pm$ 1.8)	NM	8.2 ( $\pm$ 1.9)
<b>Cinnamon 250</b>	8.2 ( $\pm$ 1.8) <sup>*</sup>	NM	7.9 ( $\pm$ 1.9)	NM	7.7 ( $\pm$ 1.7) <sup>*</sup>
<b>Cinnamon 500</b>	8.7 ( $\pm$ 1.8) <sup>*#</sup>	NM	8.1 ( $\pm$ 1.7) <sup>#</sup>	NM	7.9 ( $\pm$ 1.7) <sup>*</sup>

\*# Values in a single row with same superscript are significantly different from each other; NM – Not Measured; SD – Standard Deviation

**Cinnamon phase II/III clinical trial - changes in cholesterol and triglycerides**

	Mean ( $\pm$ SD)				
	Visit 0 (Baseline)(n=210)	Visit 1 (1 month)(n=199)	Visit 2 (2 months)(n=195)	Visit 3 (3 months)(n=188)	Visit 4 (4 months)(n=186)
<b>Total cholesterol (mg/dl)</b>					
<b>Placebo</b>	185.4 ( $\pm$ 49.1)	NM	178.8 ( $\pm$ 48.1)	NM	181.8 ( $\pm$ 48.6)
<b>Cinnamon 250</b>	167.7 ( $\pm$ 40.1)	NM	170.3 ( $\pm$ 39.4)	NM	172.3 ( $\pm$ 44.6)
<b>Cinnamon 500</b>	178.9 ( $\pm$ 39.1) <sup>*</sup>	NM	174.1 ( $\pm$ 45.3)	NM	164.7 (37.7) <sup>*</sup>
<b>LDL cholesterol (mg/dl)</b>					
<b>Placebo</b>	109.0 ( $\pm$ 42.1)	NM	105.4 ( $\pm$ 43.4)	NM	103.1 ( $\pm$ 31.8)
<b>Cinnamon 250</b>	97.6 ( $\pm$ 36.3)	NM	105.7 ( $\pm$ 41.1)	NM	101.4 ( $\pm$ 32.9)
<b>Cinnamon 500</b>	106.1 ( $\pm$ 35.7) <sup>*</sup>	NM	100.8 ( $\pm$ 38.6)	NM	96.1 ( $\pm$ 28.5) <sup>*</sup>
<b>HDL cholesterol (mg/dl)</b>					
<b>Placebo</b>	49.7 ( $\pm$ 12.2)	NM	47.7 ( $\pm$ 11.4)	NM	49.1 ( $\pm$ 12.1)
<b>Cinnamon 250</b>	47.2 ( $\pm$ 11.9)	NM	46.4 ( $\pm$ 13.1)	NM	47.5 ( $\pm$ 11.3)
<b>Cinnamon 500</b>	48.9 ( $\pm$ 11.8)	NM	46.4 ( $\pm$ 13.1)	NM	47.5 ( $\pm$ 11.3)
<b>Triglycerides (mg/dl)</b>					
<b>Placebo</b>	124.4 ( $\pm$ 60.2)	NM	128.2 ( $\pm$ 54.0)	NM	122.1 ( $\pm$ 42.6)
<b>Cinnamon 250</b>	117.4 ( $\pm$ 44.8)	NM	114.4 ( $\pm$ 39.6)	NM	120.4 ( $\pm$ 57.7)
<b>Cinnamon 500</b>	117.1 ( $\pm$ 52.0)	NM	114.3 ( $\pm$ 41.8)	NM	117.6 ( $\pm$ 53.8)

\*# Values in a single row with same superscript are significantly different from each other; HDL – High Density Lipoprotein; LDL – Low Density Lipoprotein; NM – Not Measured; SD – Standard Deviation

## Reference

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