

Anti-Senility Efficacy of Rosa Roxburghii Tratt healthy beverage

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Abstracts

The healthy beverage named Cili "874" was given to 78 healthy aged persons in Guiyang city. The results showed that SOD activity in RBC was greatly increased, from 1356.98 ± 570.31 U/gHb to 2250.33 ± 392.15 U/gHb ($P < 0.001$); plasma level of LPO significantly decreased from 4.1 ± 0.79 nmol/ml to 3.2 ± 0.74 nmol/ml ($P < 0.001$).

The result suggested that the Cili "874" healthy beverage could inhibit free radical and LPO production and had potential effect of anti-senility.

Key Words: Cili; Free Radicals; LPO; SOD

Cili (*Rosa Roxburghii* Tratt) is abundant in our country. Chinese medicine recorded that the Cili could improve the function of absorption.

Nutritive value of Cili is high. Animal experiments showed that the resistant capacity of Cili juice to free radicals was much higher than that of the fruit of Chinese Wolfberry, Pollen and Queen Bee Jelly(1) . it can also prevent nitrosamine from inducing carcinoma by inhibiting synthesis of carcinogenic nitrosamine in the body and placenta.

We extracted and purified SOD from Cili(2) . Then Cili "874" healthy beverage was manufactured.

Experiments conducted in home-fly showed that the drink could decrease the lipofuscin content, increase the SOD activity in the brain, and prolong the L50 (half-life period).

This paper presents the effect of the "874" beverage on anti-senility.

Subjects and Methods

1. **Subjects:** 78 health aged persons (55-101 years old), 54 men and 24 women were selected as subjects. The average age was 66.3 years old. The subjects drank 40ml of the Cili "874" beverage one time, twice a day for two months. The vein blood was collected to determine the LPO content and SOD activity at the beginning and the end of the experiment respectively.
2. **Methods:**
 - i. Determination of SOD activating in RBC: Pyrogallol Auto-oxidation⁽³⁾
 - ii. LPO content in plasma: TBA Fluorescence.
 - iii. Content of Hemoglobin; "Kuerter" Blood Cell Counter
 - iv. Extracting procedures of SOD in RBC: Two ml anti-coagulated blood with heparin 2ml was centrifugation. The residual was kept and washed three times with physiological saline. Then the same volume cool distilled water as RBC was added and vortexed. Getting the solution 1 ml, adding distilled water 1ml and cool pure ethanol 1ml shaking, adding chloroform 0.6ml, vortexing 1minute, centrifuging 5 minutes in 3000rpm, recording the volume of clear top layer that was SOD extraction.

Results

- i. Plasma Value of LPO at Beginning and End of Experiment The plasma value of LPO of the 78 aged persons was examined before and after drinking Cili "874". The results showed LPO content in plasma was significantly decreased in male, female and total subjects ($P < 0.001$)

Table 1.

Table 1 Plasma value of LPO (nmol/ml, X ± SD)				
	n	Before Experiment	After Experiment	P
Male	54	4.0 ± 0.77	3.2 ± 0.78	<0.001
Female	24	4.3 ± 0.82	3.17 ± 0.63	<0.001
Total	78	4.1 ± 0.79	3.2 ± 0.74	<0.001

- ii. **Changes of SOD Activity in RBC:** The results showed SOD activity in RBC after experiment was significantly increased 72%, 60% and 658% for male, female and total subjects respectively (P<0.001) (Table 2).

Table 2 Changes of SOD activity in RBC (U/g Hb, X ± SD)				
	N	Before Experiment	After Experiment	P
Male	54	1346.62 ± 543,86	2315,82 ± 345.32	<0.001
Female	24	1380.21 ± 637.75	2203.06 ± 449.20	<0.001
Total	78	1356.96 ± 570.31	2250.33 ± 392.15	<0.001

- iii. **Changes of SOD/LPO Ratio before and after experiment:** The result indicated that SOD/LPO ratiosignificantly increased for each group after experiment (P<0.001) (Table 3).

Table 3 SOD/LPO Ratio before and after experiment (X ± SD)				
	N	Before Experiment	After Experiment	P
Male	54	384.05 ± 85,81	748,21 ± 77,54	<0.001
Female	24	334,05 ± 73,34	684,60 ± 70.89	<0.001
Total	78	365,12 ± 97,54	728,67 ± 76,895	<0.001

DISCUSSION

SOD is natural component for eliminating O₂ (superoxide anion radical). The lower the SOD activity was, the lower capacity of oxygen radical elimination was, and the more rapid of lipid peroxidation was. Excessive amount of LPO damaged the cells. Many preceding studies indicated that with the aging, SOD activity of human Red Blood Cells decreased, while LPO content of Plasma increased. This study showed that after administration of "874" drink containing high level SOD, LPO content in plasma significantly decreased, SOD activity in RBC significantly increased, and SOD/LPO ratio significantly increased. It was suggested that the beverage had potential effect of anti-senility.