EFFECTS OF BIOZYME ON ALCOHOL METABOLISM

1. Purpose

   To test the effects of Fermented Vegetable Extract, BIOZYME, on alcohol metabolism after an alcohol intake.

2. Participants

   21 healthy men and women (17 males and 4 females)

3. Test Food

   Treatment group: 100ml BIOZYME/whisky equivalent to 30-65g alcohol (SUNTORY HOLDINGS LIMITED, 43% ethanol)

   Control group: 100ml water/whisky equivalent to 30-65g alcohol (SUNTORY HOLDINGS LIMITED, 43% ethanol)

4. Method: The participants were asked to skip breakfast and to drink 100ml BIOZYME (test group) or 100ml water (control group) at 10 am, followed by whisky as straight, which was equivalent to 30-65g alcohol, between 11 and 11.30 am. Citric acid blood collection was conducted five times, before the alcohol intake and 1, 2, 4, 6 hours after the intake. The blood alcohol and aldehyde concentrations were measured with a headspace method using gas chromatography.

   Moreover, the breath alcohol concentration was measured by breathing deeply, followed by exhaling from the lungs into the sampling pipe mouth of a portable Infrared Analyser for five seconds. After one week, the two groups were swopped to the other groups for the cross-over test, employing the same method with the same participants.

5. Results

   The blood aldehyde concentration of the BIOZYME-administered group at one hour post-intake of alcohol was 13.9±9.1μM, whereas that of the control group was 25.2±16.7μM. BIOZYME showed a reducing effect on the blood aldehyde concentration (45% decline, $p<0.0005$). This effect was seen for 4 hours post-alcohol-intake (about 34% reduction, $p<0.005$) (table 1).

   Furthermore, the blood alcohol concentration of the BIOZYME-administered group at one hour post-alcohol-intake was 15.6±3.9mM (approximately 23% reduction compared to the control group, $p<0.005$) and an inhibitory effect on the blood alcohol concentration was observed.

   Moreover, the breath alcohol concentration of the BYOTIME-administered group at one hour post-alcohol-intake was 0.18±0.11mg/L, while that of the control group was 0.32±0.11mg/L (about 44% decrease, $P<0.0005$). This inhibitory effect lasted for two hours after the-alcohol-intake (table 2).

6. Discussion

The significant inhibitory effects of BIOZYME on blood alcohol and aldehyde concentrations as well as on breath alcohol concentration after taking whisky were observed. Apart from the results from the current study, an aldehyde acute toxicity resistance test was conducted on mice and BIOZYME clearly showed a reducing effect on toxicity. All these results indicate BIOZYME has a promoting effect on metabolising alcohol and aldehyde.

Table1 Blood aldehyde concentration (μM)

	After intake of whisky			
	1hr	2hr	4hr	6hr
Control	25.2±16.7	20.2±18.5	10.6±6.6	6.6±4.7
BIOZYME	13.9±9.1	12.4±7.4	7.0±4.6	5.5±4.3
Inhibition	44.8% (p<0.0005)	38.9%	34.0% (p<0.005)	16.7%

Table2 Breast alcohol concentration (mg/L)

	After intake of whisky			
	1hr	2hr	4hr	6hr
Control	0.32±0.11	0.26±0.08	0.12±0.06	0.04±0.03
BIOZYME	0.18±0.11	0.18±0.07	0.11±0.06	0.04±0.04
Inhibition	43.8% (p<0.0005)	30.8% (p<0.0005)	8.3%	0%

*Reference: alcohol research and drug dependence, Vol.30, No.2, April 1995.

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