The Effect of Ginseng on the Hepatic Ethanol-Metabolizing Enzyme Activity in Rat Liver

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Abstract—The investigation was aimed to study the effect of ginseng ethanol extract on the hepatic ethanol-metabolizing enzyme activity in vivo. The extract (100mg/kg, day) was administered orally to Sprague-Dawley rats for 7~10 days and their microsomal ethanol oxidizing system (MEOS) and catalase activities were measured. The MEOS activity in the rat treated with the extract was not significantly different from that of the normal group. Microsomal fraction containing MEOS was separated and the MEOS activity was measured after preincubation for 5, 60 and 180 min, respectively. There were no significant differences in MEOS activities between the normal and treated groups preincubated for 5, 60 and 180 min. The activity in the rat treated with single i.p. injection of 95% CCl₄ (0.5ml/kg) was decreased by 48%, compared to the normal group and in the rat treated with the extract (100mg/kg) for 7~10 days, the decrease of the MEOS activity was potentiated. Catalase activity in the rat treated with the extract (100mg/kg) was similar to that obtained from the normal group.

Keywords—Ginseng • hepatic ethanol-metabolizing enzyme • catalase activity

Lim and Kim¹ were analyzed for the saponin in Zoazolamine. They investigated the effects of ginseng on the hepatic ethanol-metabolizing enzyme activities. Shin² et al. investigated the effects of ginseng on the hepatic ethanol-metabolizing enzyme activities. In their study, they found that the activity of the enzyme was significantly increased in rats treated with ginseng extract. They also found that the enzyme activity was increased in rats treated with ginseng extract compared to the control group. Additionally, they found that the enzyme activity was increased in rats treated with ginseng extract compared to the control group. In conclusion, the results of this study suggest that ginseng extract has a positive effect on the hepatic ethanol-metabolizing enzyme activities.
매탄을 섭취 후 적어도 95%가 갑에서 acetalddehyde로 산화되며 hepatocyte에는 in vitro에서 매탄을 acetalddehyde로 산화시키는 세 종류의 효소 즉 alcohol dehydrogenase(ADH), microsomal ethanol oxidizing system(MEOS), catalase 등이 존재하고 있다.

Alcohol dehydrogenase-independent pathway로 MEOS는 1965년에 Orme-Johnson에 의해 처음으로 보고되었고 그 후 Lieber와 Decarli에 의해 연구가 이루어졌다.

본 실험은 人을 허혈한 집단으로 투여한 후, 갑에 존재하는 MEOS와 catalase 활성에 의한 알코올의 산화 효소들 in vitro에서 측정해 보고 또한 hepatotoxicity의 CCI4를 투여한 친구 및 인 상투여 친구에서, MEOS 활성을 측정함으로서 人에서 microsomal ethanol oxidizing system에 의한 in vivo 효과를 연구하였다.

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1. 실험 맛리

1) 人巣 에탄올 업기스

인삼 연구소에서 구입한 200~250g의 5회Sprague-Dawley系 흉부에 산양사는 2회씩 주었다.

2) 실험 정류

同一조종에서 사용한 200~250g의 흡혈 Sprague-Dawley系 흉부에 산양사는 2회씩 주었다.

2. 실험 방법

1) Microsomal ethanol oxidizing system 활성에 미치는 효과

(1) Microsome 분획 創造

대조군에는 흉부 무게 200g 0.4ml의 0.9% 생리의 식염수로 人巣 흉부에는 人巣 에탄올 업기스를 100mg/kg/day로 하여 7~10일간 투여하고, 마지막 투여로부터 24시간 餓食시킨 후, 흉부를 간단히 작게 쌍다시고, 흉부를 끌어올려 적혈를 계획한 다음 심속하게 개복하였다.

Ice cold 0.15M KCl(Showa Chemical Co.)로 갑을 홍유하여 적혈을 계획한 후, 갑을 예작하였다.

| Fig. 1. Preparation of microsomal fraction |

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