

# 高食塩食摂取ラットの尿中ナトリウム排泄と血糖値に及ぼす $\gamma$ -トコフェロール富化食用油脂の摂餌効果

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## Feeding effects of $\gamma$ -tocopherol-enriched edible oil on urinary sodium excretion and blood glucose level in rats fed with a high-salt diet

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### Abstract

Vitamin E is a fat-soluble component that has an antioxidant effect in the body, and there are many research reports on the physiological functionality of  $\alpha$ -tocopherol. In recent years, however, it has been reported that  $\gamma$ -tocopherol also has various physiological actions such as a diuretic action and a urinary sodium excretion promoting action. In this study, in order to confirm a urinary sodium excretion promoting effect of  $\gamma$ -tocopherol in long-term dietary intake, we prepared canola oil containing high  $\gamma$ -tocopherol, and investigated urine volume, urinary sodium excretion, and blood biochemical test value in high-salt diet (5-8% NaCl diet) Sprague-Dawley rats administered continuously high  $\gamma$ -tocopherol oil for 28 days. As a result, on day 15, the urine volume of high  $\gamma$ -tocopherol oil administration group increased significantly ( $p < 0.05$ ) as compared with the control group. On day 15 and 22, the urine sodium excretion of high  $\gamma$ -tocopherol oil administration group seemed increased significantly ( $p < 0.05$ ) as compared with the control group, however, food intake was also significantly increased ( $p < 0.05$ ) compared to the control, resulting in a correlation between sodium intake and excretion. Therefore, in this study, we could not observe the urinary sodium excretion promoting effect of administered continuously high  $\gamma$ -tocopherol oil, but an increased urine output. In addition, as a result of blood biochemical test after the end of administered continuously, the blood glucose level of high  $\gamma$ -tocopherol oil administration group was significantly ( $p < 0.01$ ) lower than that of the control. Since the blood glucose level decreased and the difference of tocopherol content observed in the liver, it may be considered the possibility that the increase of  $\gamma$ -tocopherol in the blood affected the glycolipid metabolism due to the continuous intake of  $\gamma$ -tocopherol.

**Keywords:**  $\gamma$ -トコフェロール、キャノーラ油、Na 排出、血糖値  
 $\gamma$ -tocopherol, canola oil, sodium excretion, blood glucose level

### I 緒言

ビタミン E は、脂溶性ビタミン群の一つであり、1922

年に Evans と Bishop によりネズミの抗不妊因子として発見報告された。化学構造は、クロマン環とイソプレニ鎖により形成される 8 種のトコロール族であり、トコフェ

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