# ソルビン酸を添加した培養ラット肝細胞における細胞内グルタチオン減少と脂質過酸化

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**Effect of potassium sorbate on cellular GSH level and lipid peroxidation in cultured rat hepatocytes**

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**ABSTRCT** Change in cellular GSH level was examined after the addition of 1 – 10 mM potassium sorbate(SA–K) to cultured rat hepatocytes. The cellular GSH content was decreased to the lowest level at 6hr after the addition of SA–K, and then gradually returned to the normal level except for hepatocytes exposed to 10 mM SA–K. Although the decrease in GSH level was not associated with LDH leakage in hepatocytes exposed to SA–K up to the concentration of 5 mM, cell injury was caused in cells exposed to 10 mM SA–K. When eicosapentaenoic acid was added in conjunction with various concentrations of SA–K to hepatocytes, peroxidation of the fatty acid was accelerated in parallel with the decrease in cellular GSH level. The enhanced lipid peroxidation in the hepatocytes co–exposed to SA–K and eicosapentaenoic acid(EPA) induced cell injury to develope. These results suggest that hepatocytes exposed to SA–K become susceptible to oxidative stress such as lipid peroxidation.

**抄録** 培養肝細胞に食品保存料の一つであるソルビン酸カリウムを1－10 mM添加すると、細胞内グルタチオン濃度は添加6時間まで減少し、10 mM濃度の場合を除いてはやがて正常値まで回復していった。細胞内グルタチオン濃度の低下に伴う細胞傷害は10 mM濃度を除いてはやはり認められなかった。しかし、エイコサペンタエン酸を取り込ませ脂質過酸化に対する感受性を増大させた培養肝細胞にソルビン酸カリウムを添加すると脂質過酸化が誘起され、それに伴って細胞内グルタチオン濃度のさらなる減少と共に細胞傷害も惹起された。従って、ソルビン酸カリウムにさらされ

ると、細胞は脂質過酸化などの酸化的ストレスに対する感受性が高まることが示唆された。