Modulation of carcinogen metabolizing cytochromes P450 in rat liver...
Modulation of carcinogen metabolizing cytochromes P450 in rat liver and kidney by cabbage and sauerkraut juices: comparison with the effects of indole-3-carbinol and phenethyl isothiocyanate.

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Abstract

This study investigated the effect of raw cabbage and sauerkraut juices on the activity and expression of CYP1A1, 1A2, 1B1 and 2B in Wistar rat liver and kidney. The results were compared with those of two commercially available products of glucosinolates degradation: indole-3-carbinol (I3C) and phenethyl isothiocyanate (PEITC). Significant differences in the effect of the cabbage juices as well as I3C and PEITC between the liver and kidney were found. In the liver, both juices decreased the activities of enzymatic markers of CYP1A1 and CYP1A2 after 10 days of the experiment, while in the kidney an enhancement of the activity of these enzymes was observed on days 4 and 10. The increased activity of these enzymes and CYP1A1/1A2 protein level in the liver was found after 30 days of treatment with sauerkraut juice. A similar effect was observed as a result of PEITC treatment. I3C increased the expression and activity of hepatic CYPs at all time points investigated. In conclusion, the present study demonstrates that raw cabbage and sauerkraut juices may affect CYPs involved in the activation of carcinogens/xenobiotics and in this way exert anticarcinogenic activity. The final effects, however, depend on the time-frame of exposure and the type of tissue.

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