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[OP-59]

INHIBITORY EFFECTS OF FLAVONOIDS ON THE BIOSYNTHESIS OF PROSTAGLANDIN E2 (PGE2) IN HUMAN PLASMA

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 Co Author : Khairana Husain, Juriyati Jalil
 Speaker : Dira Hefni (Universitas Andalas)

Nine flavonoids, apigenin (1), biochanin A (2), fisetin (3), flavones (4), galangin (5), 3-hydroxyflavone (6), myricetin (7), α -naphthoflavone (8) and β -naphthoflavone (9), were investigated for their inhibitory effects on the biosynthesis of prostaglandin E2 (PGE2) in human plasma in vitro. The anti-inflammatory effect was performed by measuring the PGE2 levels in plasma by using radioimmunoassay (RIA) technique. Among the nine flavonoids, α -naphthoflavone (8) exhibited the highest inhibition of 63.3 %, followed by β -naphthoflavone (9) and 3-hydroxyflavone (6) with 60.2 % and 56.4 % inhibition respectively. Meanwhile, the lowest inhibitory effect was showed by flavone (4) with only 11.4 % inhibition. The results indicate that α -naphthoflavone (8) and β -naphthoflavone (9) possess promising potent anti-inflammatory properties.

Keyword: Anti-inflammatory; Prostaglandin E2; Plasma; Flavonoids

[OP-60]

EFFECTS OF CLOVE (*Syzygium aromaticum*) IN BODY WEIGHT, LIVER WEIGHT, AND MACROSCOPIC LIVER APPEARANCE IN SPRAGUE DAWLEY RATS FED WITH HIGH FAT DIET

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High fat diets leading to excessive energy intake are strongly linked to the increasing obesity and developing the nonalcoholic fatty liver disease (NAFLD) worldwide. Obesity and NAFLD are highly prevalent and cause numerous metabolic diseases. However, drugs for the prevention and treatment of obesity and NAFLD remain unavailable. Cloves (*Syzygium aromaticum*, SA) contains antioxidant components such as flavonoids, phenolic, and terpenoids, may have properties as protective agent in liver. In this study, we investigated the effects of SA on high-fat-diet-induced obesity and liver structure change in rats. To examine the effects of SA in vivo, 30 male rats (5 each group) were given intragastric administration of vehicle CMC 0,5% (normal control), high fat diet only (negative control), and simvastatin (positive control). The other three treatment groups were treated with dosages 150, 250, and 500 mg/kg/day of SA ethanolic extract. After 43 days of treatment, liver weight and body weight were counted, liver was also assessed using macroscopic analysis. We found that compared with the negative control, SA reduced body weight of rats. Rats treated with SA also exhibited significant reduction of liver weight ($P < 0,01$) and relative liver weight ($P < 0,05$). Additionally, SA prevented the macroscopic structure change of liver that leads to NAFLD. These results suggest that SA may affect obesity and maintain liver structure by enhancing fat metabolism and antioxidant defenses. However, the exact molecular mechanisms and active components responsible for the inhibitory effects of SA on obesity and liver structure change require further investigation.

Keyword: *Syzygium aromaticum*; Cloves; High fat diet; Body weight; Liver weight