

Production, purification and characterization of extracellular protease from *Streptomyces scabiei* subsp. *chosunensis* M0137

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Streptomyces scabiei subsp. *chosunensis* M0137, nonadecanoic acid producer, showed the highest protease activity when grown in OSY medium (oatmeal 1.5%, soybean meal 2%, dried yeast 1%) supplemented with glycerol (1%) and CaCO₃ (0.1%). Two forms of protease(SS-1 and SS-2) were fractionated and purified through Ultrogel AcA 54 gel filtration and DEAE-sepharose CL-6B column chromatography. Both proteases were practically stable in the pH range of 6-10. The optimal pH for the activities of both protease SS-1 and SS-2 were 7.5 and 8.0, respectively. The optimum temperature for the activities of both protease SS-1 and SS-2 were 55 °C and 45 °C. About 70% of the original protease SS-1 activity remained after being treated at 45 °C for 30min, but protease SS-2 was practically stable at 40-45 °C. Both proteases were strongly inhibited by the metal chelators EDTA and EGTA, whereas phenylmethylsulfonyl fluoride (PMSF), a serine protease inhibitor, did not show any significant effect on the enzyme activities. Also, both proteases were stable against H₂O₂, whereas both proteases were found to be unstable against SDS. Both proteases were inhibited in the presence of several metal ions (Cu²⁺, Ni²⁺, Zn²⁺).

[PC2-9] [10/17/2002 (Thr) 13:30 - 16:30 / Hall C]

Antihyperlipidemic effect of *Alpinia officinarum*

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As the part of our continuing study for antihyperlipidemic agents from the herbal medicinal resources, we examined the possibility of the ethylacetate fraction of *Alpinia officinarum* water extract in vitro and in vivo. We isolated some compounds from the ethylacetate fraction of *Alpinia officinarum* and measured their antihyperlipidemic activities.

The active components isolated by silicagel column improved serum TG, HDL and LDL level in corn oil feeding and triton WR-1339 induced hyperlipidemic mice. The most active compound was 3-Methylethergalengin. Consequently, these biologically active herbal functional foods could be used for preparing the healthy food which might treat diabetes, hyperlipidemia and other disease.

[PC2-10] [10/17/2002 (Thr) 13:30 - 16:30 / Hall C]

The properties of ginseng saponins metabolizing intestinal bacteria

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Ginseng(the root of *Panax ginseng* C.A. Meyer, Araliaceae) has been used for thousands of years as a traditional medicine in Asian countries. The main components of Ginseng are ginsenoside Rb1, Rb2 and Rc. These compounds are transformed by intestinal microflora. The main metabolite of ginsenosides was compound K (IH-901). The transformed compound K shows an antimetastatic or anticarcinogenic effect by blocking tumor invasion or preventing chromosomal aberration and tumorigenesis.

Therefore, we isolated and characterized ginseng saponin-metabolizing bacteria from human intestinal microflora.

Among 200 tested intestinal bacteria, we found 78 bacteria to transform ginseng saponins to compound K. These bacteria were separated into three groups: the first group highly produced ginsenoside Rd (29), the second group produced potentially ginsenoside F2 (21) and the third produced compound K(28).