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 30 min, but protease SS–2 was practically stable at 40–45°C. Both proteases were strongly inhibited by the metal chelators EDTA and EGTA, whereas phenylmethylsulfonylfluoride (PMSF), a serine protease inhibitor, did not showed 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 protease 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–Methylethergalagin. 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 (1H–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 group: the first group highly produced ginsenoside Rd (29), the second group produced potency ginsenoside F2 (21) and the third produced compound K(28).