sodium, 5% hydrolyzed carrageenan, 2,4-dinitrochlorobenzene(DNCB)). These colitis mice all showed signs of diarrhea, occult blood, prominent regenerations of the colonic mucosa and shortening of large intestine.
Among these colitis mice, GAGs degrading enzymes of intestinal bacteria, chondroitinase and hyaluronidase, were potently induced in 5% hydrolyzed carrageenan and DNCB-induced mice models.
These hydrolyzed carrageenan and dextran sulfate sodium also exhibited the *in vitro* cytotoxicity against intestinal epithelial cell line. The compounds also induced bacterial GAGs degrading enzymes *in vitro* intestinal bacteria culture system.
Therefore, these results suggest that the supressions of a GAGs-degrading bacteria could improve a non-infectious inflammatory disease.

* Intestinal epithelial cell : IEC18 cell

[PC2-10] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

β-Glucosidases of human intestinal bacteria transforming ginsenoside Rb1 and Rb2 to compound K

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Among herbal medicines, ginseng is frequently used as a crude taken orally in Asian countries as a traditional medicine. The major components of ginseng are ginsenosides. These ginsenosides have been reported to show various biological activities including an anti-inflammatory activity and anti-tumor effects. To explain these pharmacological actions, it is thought that ginseng saponins must be metabolized by human intestinal bacteria after orally taken them.
Therefore, we investigated the metabolism of ginsenoside R_{b1} and R_{b2} by human intestinal bacteria and their metabolism-related β-glucosidase. By human intestinal microflora, ginsenoside R_{b1} and R_{b2} were metabolized these ginsenosides to compound K and 20(S)-protopanaxadiol. *Eubacterium* sp., *Streptococcus* sp. and *Bifidobacterium* sp., which hydrolyzed more potently gentiobiose than sophorose, metabolized ginsenoside R_{b1} to compound K via ginsenoside R_d rather than gypenoside XVII. However, *Fusobacterium* K-60, which hydrolyzed more potently sophorose than gentiobiose, was metabolized to compound K via gypenoside XVII. Ginsenoside R_{b2} was also metabolized to compound K via ginsenoside R_d or compound O by human intestinal microflora. *Eubacterium*sp., *Streptococcus* sp. and *Bifidobacterium* sp. metabolized ginsenoside $R_{b2}$to compound K via ginsenoside R_d rather than compound O. *Fusobacterium* K-60 metabolized ginsenoside R_{b2} to compound K via compound O.

[PC2-11] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

The Gene Cloning of a Chitinase from Cytophaga sp. HJ

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Cytophaga sp. HJ is a bacterial strain producing an extracellular chitinase, induced by chitin. The chitinase gene was cloned in Escherichia coli JM109 by using pUC18. A clone expressing chitinase activity was obtained from about 670 transformants. It had 12.7Kb plasmid DNA. When the plasmid was digested by HindIII, we found that it contained 10Kb insert DNA fragment as well