Rotavirus predominantly occurs the sporadic diarrhea in infants and young children. To prevent rotaviral diarrhea, many kinds of orally administered vaccines against each of the epidemiologically important serotypes have been developed. However, the developed vaccines were not complete for preventing the rotaviral diarrhea until now. Therefore, we screened the inhbitory substances from some traditional herbal medicines on the infectivity of rotavirus. Among tested 60 kinds of herbal medicines, the fruit of *Citrus aurantium* had the most potent inhibitory activity on rotavirus infection. The active components of the fruit of *Citrus aurantium* were neohesperidin and hesperidin. Their 50% inhibitory concentrations were 25 and 10 μM, respectively. These active herbal extracts and the isolated active compounds are believed to contribute to the prevention of the rotaviral illness in some degree.

[PC2-2] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Biotransformation of Rhaponticin from the Rhizome of Rheum undulatum by Human Intestinal Bacteria and Their Anti-allergic Activity

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During the screening program from discovering hyaluronidase-inhibitory substances from natural products, *Rheum undulatum* (Family Polygonaceae) was found to show inhibitory activity for the activation of hyaluronidase. Rhaponticin isolated from the rhizomes of *Rheum undulatum* (Family Polygonaceae) is metabolized to rhapontigenin and chrysophanol by human intestinal microflora, respectively. Most intestinal bacteria isolated from human feces catalyzed these metabolic pathways. Among rhaponticin and its metabolite, rhapontigenin had the most potent inhibitory activity on a hyaluronidase, a histamine release from mast cell and PCA reaction. The inhibitory activity of rhapontigenin was more potent than that of disodium cromoglycate, one of commercial anti-allergic drugs. These results suggest that rhaponticin in the rhizomes of *Rheum undulatum* should be a prodrug that has an extensive anti-allergic property

[PC2-3] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Two Novel α-L-Rhamnosidase from Quercitrin-hydrolyzing Fusobacterium K-60

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Recently we isolated *Fusobacterium* K-60, a bacterium transforming quercitrin to quercetin, from human intestinal microflora. We tried to purify α-L-rhamnosidase from *Fusobacterium* K-60, comparing its properties to those of the previously purified enzymes. *Fusobacterium* K-60 produced two kinds of α-L-rhamnosidases, cytosolic and membrane enzymes. The cytosolic enzyme hydrolyzed naringin and poncirin but not quercitrin. Whereas, the membrane enzyme did vice versa. The cytosolic enzyme was purified to homogeneity by 70% ammonium sulfate fractionation, butyl toyopearl, hydroxyapatite, Sephacryl S-300, Q-sepharose column chromatography. The specific activity of purified α-L-rhamnosidase was 2.89 μmole/min/mg protein and its molecular weight was calculated to be 150 kDa by gel filtration. From gel filtration data, it seems to be composed of four identical subunits of 40 kDa with pI and optima pH values of 5.2 and 5.5-7.0, respectively.

[PC2-4] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]