[PE1-17] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Preparation and evaluation of Titrated Extract of Centella Asiatica Niosome/W/O system cream for site-specific targeting

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Titrated Extract of *Centella Asiatica*(TECA), which is poorly water-soluble extract from the Centella Asiatica, is well known for its express excellent wound healing.
The purpose of this study is prevention, treatment of stretching mark by using multiple emulsion system (Niosome/W/O system).TECA Niosome/W/O system cream was prepared with different concentrations of cetyl alcohol and ceramide.
TECA Niosome/W/O cream was evaluated with respect to their rheological properties, permeation through excised skin of hairless mouse and in vitro and in vivo accumulation in the skin. In addition, dermal thickness of hairless mouse skin was evaluated following the in vivo application of TECA Niosome/W/O cream.
The oil-water partition coefficients of asiaticoside, madecassic acid and asiatic acid were the highest at pH 5 . In the stability test of TECA, remaining percentages of asiaticoside, madecassic acid and asiatic acid in 50 days were almost same in the presence of 1 w/w% tocopherol. The corresponding percentages in the presence of 2% and 3% to tocopherol were little increased. Morphology of niosome with Span 60 and cholesterol was identified by image analyzer. TECA Niosome/W/O system creams showed pseudoplastic flow and hysteresis loop. Viscosity was increased with an increase in the concentration of cetyl alcohol and decreased with an increase in the concentration of ceramide.
The permeation of TECA from formulations through skin of hairless mouse did not observed. In vitro experiment, amount of accumulated drug in the excised skin of hairless mouse was decreased with an increase in the concentration of cetyl alcohol and showed no relationship with concentration of ceramide. Amount of accumulated drug in formulation A-3 was higher than in niosome suspension and FAPG cream. In vivo experiment, amount of accumulated drug in formulation A-2 and A-3 was much higher than that of niosome suspension and FAPG cream.
Being treated with FAPG cream during 8 weeks, the dermal thickness of hairless mouse was 2.6 times higher than that of 16 weeks-control group. The dermal thickness of hairless mouse was 3.7 times higher than that of 16 weeks-control group in the Niosome/W/O cream treatment.
From this study TECA Niosome/W/O system cream showed the possibility of prevention, treatment of stretching marks.

[PE1-18] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Cytotoxicity of flavonoids against cancer cells <I>in<I> <I>vitro<I>

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Flavonoids are an interesting group of compounds not only because of their abundance and wide distrubution in the plant kingdom but also because of their widespread biological activities. Some Flavonoids revealed a good cytotoxic or cytostatic activity against cancer cells, and they were reported to inhibit certain regulatory enzymes such as protein kinase C and DNA topoisomerases. We have already reported the cytotoxicities of flavone and of some hydroxyflavones against human cnacer cells, and their effects on the cell cycle. In this study, we tested the cytotoxicity of some other flavonoids to human cancer cells including multidrug resistant (MDR) cell lines in vitro. Among the catechins tested, (-)catechin gallate, (-)epicatedchin gallate, (-)gallocatechin gallate, (-) epigallocatechin gallate and (-)epigallocatechin revealed cytotoxicity to the cells, but (-)catechin and (+)epicatechin did not revealed cytotoxicty up to 100 uM. Some other flavonoids such as quercetin and myricetin also revealed relatively good cytotoxicity to the cells.In addition, the

cytotoxicy of all the flavonoids tested was not affected by P-glycoprotein mediated MDR.

[PE1-19] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Antifibrotic Effects of the Rhodiola sachalinensis in Fibrotic Rats induced by carbon tetrachloride

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This study was carried out to investigate the protective effects of hot water extract from *Rhodiola sachalinensis* (RS) on carbon tetrachloride-induced liver fibrosis in rats.
Liver injury was induced by oral administration of carbon tetrachloride (1 ml kg-1) twice a week during 4 weeks of RS treatment. The RS (50, 100 and 200 mg kg-1) treatment in carbon tetrachloride (CCl_4) rats reduced the serum AST, ALT and ALP levels significantly ($p<0.01$ for 50, 100 and 200 mg kg-1). RS treatment reduced levels of liver hydroxyproline content ($p<0.05$ for 50 mg kg-1 and $p<0.01$ for 100 and 200 mg kg-1) and liver malondialdehyde content ($p<0.05$ for 50 mg kg-1 and $p<0.01$ for 100 and 200 mg kg-1). The morphological characteristic of fibrotic liver which appeared in CCl_4 group were improved in RS treated CCl_4 groups. Immunohistochmical examination showed that RS markedly reduced numbers of alpha-smooth muscle actin positive hepatic stellate cells in the CCl_4 rats. These results indicate that RS has an antifibrotic effect on fibrotic rats induced by CCl_4.

[PE1-20] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Effect of Salvia miltiorrhiza on biliary liver fibrosis in rats and on cultured rat hepatic stellate cells

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This study was carried out to investigate the antifibrotic effect of traditional Chinese medicinal herb, *Salvia miltiorrhiza*, on liver fibrosis induced by biliary obstruction and the antiproliferative effect on cultured rat hepatic stellate cells (HSC).
Secondary biliary fibrosis was induced in male Sprague-Dawley rats by bile duct ligation/scission (BDL). Water soluble extract of *Salvia miltiorrhiza* roots (SM) was administered orally (100 mg/kg), daily after surgery. The animals were killed after 4 weeks. In BDL rats, levels of AST, ALT, alkaline phosphatase, total-bilirubin, total-cholesterol in serum and hydroxyproline, malondialdehyde content in liver were significantly increased. The SM treatment reduced the serum AST, ALT, alkaline phosphatase, and total-cholesterol levels significantly ($p<0.01$). Liver hydroxyproline content and malondialdehyde content in SM treated BDL rats was also reduced to 45% and 60%, repectively, that of BDL control rats ($p<0.01$). The morphological characteristic of fibrotic liver which appeared in BDL control group were improved in SM treated BDL groups. Immunohistochmical examination showed that SM markedly reduced numbers of alpha smooth muscle actin (a-SMA) positive HSCs in the BDL rats. SM markedly suppressed bromo-deoxy-uridin incorporation in HSCs stimulated by platelet-derived growth factor-B subunit homodimer in a concentration-dependent manner.
These results indicate that traditional Chinese medicinal herb, water soluble extract of *Salvia miltiorrhiza*, significantly reduces BDL-induced progressive portal fibrosis in rats and the antifibrotic effect may be due to the inhibition of HSC proliferation.

[PE1-21] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]