

[PE3-1] [04/19/2001 (Thr) 15:00 – 16:30 / Hall 4]

Design, Characterization of mucoadhesive vaginal liquid suppository containing clotrimazole

Chang JY, Kong HS, Jang SJ, Lee SD, Kim EJ, Choi SO, Jeong HY, Seo KT, Jang DD, Nam KT, Kim CK

KFDA, Department of drug evaluation, division of antibiotics, College of Pharmacy, Seoul University*

For the development of vaginal liquid suppository containing clotrimazole, we studied the formulation, characterization of liquid suppository. Antifungal effect of clotrimazole was increased at pH 4.0 and 5.0 than pH 6.0 and 7.0. With increasing concentration of polycarbophil(PC) was increased the adhesiveness and syringeability. The effect of these polymer on mucoadhesion was important on their mucoadhesive nature. In rheological measurements, the storage modulus was increased by temperature sweep from 10 to 40 and an increasing concentration of PC resulted in decreasing sol-gel temperature. In the above study, formulation was selected as P 407/188/PC(15/20/0.2) containing clotrimazole 1% that offered an appropriate balance of the above physical properties. Therefore, the current development of vaginal liquid suppository may provide a useful delivery systems for clotrimazole in terms of excellent physicochemical properties as mentioned above.

[PE3-2] [04/19/2001 (Thr) 15:00 – 16:30 / Hall 4]

In vivo evaluation and safety of mucoadhesive vaginal liquid suppository containing clotrimazole

Chang JY, Kong HS, Jang SJ, Lee SD, Kim EJ, Choi SO, Jeong HY, Seo KT, Jang DD, Nam KT, Kim CK

KFDA, Department of drug evaluation, division of antibiotics, College of Pharmacy, Seoul University*

For the development of vaginal liquid suppository containing clotrimazole, we studied in vivo evaluation and safety of liquid suppository. In cell toxicity, clotrimazole was toxic to human cervical cell in a dose-dependent manner. However, the incorporation of the clotrimazole into the gel markedly reduced its toxicity. The in vivo antifungal activity of this formulation was compared to an PEG based formulation, during 10 days following administration of the test formulation. There was a significant improvement in antifungal activity, which the number of *C. albicans* was reduced in rat vagina. However, PEG based formulation showed a significant reduction on 4. day but did not completely eliminate *C. albicans* from the vagina and the number of yeast were increased on 7. day. Therefore, the current development of vaginal liquid suppository may provide a useful delivery systems for clotrimazole in terms of excellent efficacy and safety as mentioned above.

[PE3-3] [04/19/2001 (Thr) 15:00 – 16:30 / Hall 4]

Effect of additives on the powder characteristics of peonja dry elixir

Kim YI¹, Yong CS¹, Rhee JD¹, Kim CK², Choi HG¹

¹College of Pharmacy, Yeungnam University, Gyongsan 712-749, Korea

The purpose of this study was to investigate the effect of additives on the powder characteristics of peonja dry elixir. Peonja dry elixirs were prepared with various amounts of dextrin using a spray-dryer, and their powder characteristics such as flow, cohesion and compressibility were evaluated as an angle of repose, cohesion index and compressibility index, respectively. Their powder characteristics were not significantly different from one another, indicating that the hydrophilic dextrin, a base of dry elixir hardly affected their powder characteristics. Peonja dry elixirs were prepared with 10% dextrin and various amounts of additives such as mannitol (hydrophilic excipient), sodium lauryl sulfate (surfactant), colloidal silica (hydrophobic excipient) and HPMC (polymer), respectively, and their angle of repose, cohesion index and compressibility index were measured. The powder characteristics of peonja dry elixirs prepared with mannitol were not significantly different from one another, indicating that the mannitol scarcely improved the powder characteristics of peonja dry elixirs. The angle of repose and cohesion index of peonja dry elixirs significantly decreased with increasing amount of sodium lauryl sulfate to 0.3% followed by no significant changes in them. The cohesion index of peonja dry elixir significantly decreased with increasing amount of colloidal silica. The angle of repose and cohesion index of peonja dry elixir significantly decreased with increasing amount of HPMC to 0.3% followed by an abrupt increase in them. However, the compressibility index of peonja dry elixir significantly increased with increasing amount of HPMC to 0.3% followed by an abrupt decrease in them. Our results suggested that a small amount of sodium lauryl sulfate, colloidal silica and HPMC improved markedly the powder characteristics of peonja dry elixirs due to forming stronger and less hygroscopic shell of peonja dry elixirs. Among the peonja dry elixirs studied, the peonja dry elixir prepared with 0.3% sodium lauryl sulfate and 0.3% HPMC had the lowest angle of repose of 27° and cohesion index of 37.8%, and the highest compressibility index of 38.7%, respectively. Thus, sodium lauryl sulfate and HPMC appear to be promising additives for peonja dry elixir, if used in adequate amounts.

[PE3-4] [04/19/2001 (Thr) 15:00 – 16:30 / Hall 4]

Crystal Structure of a Homooligomycin.

Park IY, Chung UT, Min KS^o, Kim YB, Kim YH, Kim HS and Lee JJ

College of Pharmacy, Chungbuk National University, 361-763 Cheongju, Seoul National University, 151-742 Seoul, Chungnam National University, 305-764 Taejeon, Korea Research Institute of Bioscience and Biotechnology, 305-333 Taejeon, Korea

In our continuing search for biologically active materials from microorganisms, a homooligomycin was isolated from the culture broth of *Streptomyces ostreogriseusa*. The compound showed strong cytotoxicity against several human tumor cell lines. The principle was recrystallized from a methanolic solution, and its precise molecular structure was analyzed by single crystal X-ray diffraction method.

The crystal was not stable enough to X-ray, and there was about 15% intensity decrease during the data collection process. The crystal is monoclinic, with $a=20.463(3)$, $b=11.114(1)$, $c=11.308(2)$ Å, $\beta=105.78(1)^\circ$, space group $P2_1$, $Z=2$. The structure was solved by direct method and refined by least-squares procedure. The current R-value is 0.062 for 4117 observed reflections.

The structure was revealed as $C_{45}H_{74}O_{10}$, a new cytotoxic macrolide antibiotic. There are co-crystallized water molecules (one water per one compound unit) in the crystal. The molecules are held by intra- and intermolecular hydrogen bonds. The other intermolecular contacts are normal van der Waals forces.

Poster Presentations – Field F1. Clinical Pharmacy