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This study shows that sphingosine-1-phosphate (SPP) significantly inhibits melanin synthesis in a concentration-dependent manner, and that the activity of tyrosinase was also reduced in SPP-treated cells. In contrast, a specific extracellular signal-regulated protein kinase (ERK) pathway inhibitor, PD98059 increased tyrosinase activity and melanin production, and PD98059 restored the reduced tyrosinase activity and pigmentation induced by SPP. We also found that SPP induces the sustained activation of ERK and the subsequent degradation of microphthalmia-associated transcription factor (MITF), which plays a key role in melanogenesis. Thus, we further studied the relationship between the ERK pathway and melanin synthesis. PD98059 was found to prevent the MITF phosphorylation and degradation induced by SPP and to abrogate reduced tyrosinase and tyrosinase-related protein 1 (TRP1) production by SPP. These results indicate that the ERK pathway is potently involved in the melanogenic signaling cascade, and that SPP-induced ERK activation contributes to reduced melanin synthesis via MITF degradation.

[PA1-71] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

A Collaborative Study to Establish a Korea National Biological Standard for Antithrombin Concentrate

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We have carried out collaborative study to evaluate a preparation of antithrombin concentrate whether or not it was suitable to serve as the candidate for a Korea National Biological Standard. Six laboratories, including three manufacturers and three National Control Laboratories, participated in this study. The potency of this candidate preparation was determined using the heparin cofactor chromogenic method. The method is described in the Minimum Requirements for Biological Products and the European Pharmacopoeia. The candidate gave excellent intra- and inter-laboratory correlations when assayed against the second international standard for antithrombin concentrate, coded as 96/520. The participants contributed data from a total of 88 assays and the results were accepted as statistically valid when the outcome of the analysis was for linearity of dose-response relationships and for intersection at a common point at zero dose in slope-ratio model. Combined potency estimates were obtained by taking geometric means of results from all assays at each laboratory, and overall potency estimates were calculated as geometric means of results from all laboratories. The results were expressed in the form of histograms and 95% confidence intervals. Based on the results of the collaborative study described here, the candidate reference standard is judged to be suitable to serve as the Korea National Biological Standard for antithrombin concentrate.

[PA1-72] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

A NAT for reliable HBV DNA Screening of Plasma

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The safety of blood and blood products is ensured by careful selection of donors, screening of