Animals and cell line proven to be safe and absorbed well in animal studies (Korea). Korean Cell Line Bank (Seoul National University, South Korea) provided B16F10 (mouse melanoma cell) to us. The animal care and use committee in Korea Institute of Science and Technology approved the animal study. All animals were housed under a 12-h light/dark cycle in a cage and were given food and water ad libitum. All animals were handled by institutional guidelines of the Animal Care and Use Committee in Korea Institute of Science and Technology.

EXPERIMENTAL METHODS

Female C57BL/6 mice, 6 to 8 week-old were purchased from Orient Co. (Gyunggi-do, Korea), were housed under a 12-h light/dark cycle in a cage and were given food and water ad libitum. All animals were handled by institutional guidelines of the Animal Care and Use Committee in Korea Institute of Science and Technology.

B16F10 (mouse melanoma cell) was obtained from Korean Cell Line Bank (Seoul National University, Korea).
RESULTS AND DISCUSSION

The paclitaxel concentration in plasma and tumor was evaluated for the oral DHP107 and intravenous Taxol® groups in Figure 1. The decrease rate of paclitaxel concentration was faster in the blood than in the tumor for both DHP107 and Taxol® groups.

![Figure 1 Paclitaxel concentration in plasma and tumor after oral DHP107 and intravenous Taxol® administration](image)

Table 1 summarizes the pharmacokinetic parameters in the plasma and the tumor. The AUC value of DHP107 group was 14.2 and 37.9 in plasma and tumor, respectively, showing that paclitaxel distributes ca. 3 times higher in the tumor tissue than in the blood. The tumor tissue to plasma ratios of intravenous Taxol® and oral DHP107 groups were 0.899 and 2.67, respectively. It is suggested that orally administered DHP107 is better distributed to tumor tissues than intravenously administered Taxol®.

Figure 2 shows anti-tumor effect of DHP107 by measuring the tumor volume and counting the surviving mice. The growth rate of melanoma was similar for the DHP107 and Taxol® groups. The survival rate, however, was higher for the oral DHP107 and was 40 % while that of the Taxol® group was 0 % for 60 days after the tumor cells inoculation.

![Figure 2 Changes in tumor volume and number of surviving mice by intravenous Taxol® and oral DHP107](image)

**CONCLUSIONS**

Paclitaxel distributed in the tumor tissue at higher concentrations than in the blood for DHP107 explaining the similar anti-tumor effect and better survival rate in the tumor tissue. Mechanism study is in the way to explain the passive targeting of paclitaxel for the oral formulation.

REFERENCES


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