

GS03-3 **Antiproliferative effects of liposomal encapsulated zoledronic acid on human pancreatic cancer**

○Kenta MATSUBAYASHI¹, Ayumi TOKUNAGA¹, Takehiro KAWASHIRI¹, Daisuke KOBAYASHI¹, Takao SHIMAZOE¹

¹Department of Clinical Pharmacy and Pharmaceutical Care, Graduate School of Pharmaceutical Sciences, Kyushu University

Pancreatic cancer is one of fatal cancers. The development of new therapeutic strategies for pancreatic cancer is needed, because there are no effective treatments for the cancer. Ras proteins are often associated with the progressions of various cancers including pancreatic cancer. The mevalonate pathway is involved in the activation of the proteins. We previously found that both of zoledronic acid (ZOL) and fluvastatin showed anticancer effects by inhibiting the mevalonate pathway. Then, we also showed the combination of these two drugs has synergistic effect on antiproliferative action. However, ZOL is rapidly excreted by the kidney or uptaken into bones at high rate. For these reasons, insufficiency of anticancer effect and expression of side effects are discussed by the use of ZOL. In this study, we made liposomal encapsulated zoledronic acid (Lipo-ZOL) for improvement of the accumulation in the tumor by using Drug Delivery System, and investigated the anticancer effect on human pancreatic cancer cell.

Lipo-ZOL was prepared using the ethanol injection method (size: $176.9 \pm 0.6\text{nm}$, PdI: 0.111 ± 0.030 , Zeta potential: $38.3 \pm 1.3\text{mV}$). Lipo-ZOL showed significantly tumor growth inhibition compared with PBS (control) in the mice bearing MIA PaCa-2, a human pancreatic cancer cell. Moreover, the effect of Lipo-ZOL was higher than the one of ZOL.

These results showed that Lipo-ZOL may be promising treatment method for pancreatic cancer.