

The amount of liposomal cisplatin movement to the regional lymph node

Y. Ando¹, Y. Mori¹, I. Sugiyama², Y. Sadzuka², S. Goto³, T. Hosokawa³, K. Sera⁴ and
A. Fujimura¹

¹Division of Functional Morphology, Department of Anatomy, Iwate Medical University
2-1-1 Nishitokuta, Yahaba, Iwate 028-3694, Japan

²Department of Advanced Pharmaceutics, School of Pharmacy, Iwate Medical University
2-1-1 Nishitokuta, Yahaba-cho, Shiwa-gun, Iwate 028-3694, Japan

³Nishina Memorial Cyclotron Center, Japan Radioisotope Association
348-58 Tomegamori, Takizawa, Iwate 020-0603, Japan

⁴Cyclotron Research Center, Iwate Medical University
348-58 Tomegamori, Takizawa, Iwate 020-0603, Japan

Abstract

Previously, we measured the amount of the platinum transfer to the regional lymph node after controlled-release anticancer drug (liposomal cisplatin) local application in a mouse tongue using PIXE. As a result, it was confirmed that the necessary concentration of the anticancer agent reached the local and regional lymph nodes at 1/100 to 1/1000 of the usual intravascular dose. Also, we speculated that we can suppress the onset of side effects. But we could not prove it. In this study, cisplatin intraperitoneally administered as a solution and liposomalized cisplatin directly to the tongue were administered to Suncus causing vomiting reflex by administration of anticancer drug. The amount of anticancer agent transferred to the submandibular lymph node, which is the regional lymph node of the tongue and the tongue after 1 hour and 24 hours, was measured using platinum in cisplatin using PIXE. As a result, target amount of platinum was detected in the submandibular lymph nodes, which are local lymph nodes of the tongue and the tongue, which were localized at 1/1000 of the amount that induced the vomiting reaction by intraperitoneal administration. Moreover, the amount showed no vomiting reaction. It was confirmed that controlled-release cisplatin maintained the target concentration even after 24 hours.