

## Concentration of cisplatin-incorporated polymeric micelles in a murine solid tumor evaluated using PIXE analysis

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### Abstract

Elemental analysis of a murine solid tumor treated with cisplatin-incorporated polymeric micelles (NC-6004) was performed to evaluate not only concentration of the drug in the tumor tissue using the conventional PIXE analysis but also its spatial distribution in the tumor section using the submilli-PIXE analysis. The results showed higher platinum concentration for the tumor treated with NC-6004 compared to treatment with cisplatin whereas no significant difference in platinum concentration between NC-6004 and cisplatin was observed for the normal tissue. This finding suggests that NC-6004 can both provide therapeutic efficacy and reduce side effects caused by conventional treatment with cisplatin. It is demonstrated that PIXE analysis is one of the powerful tools for research fields of drug delivery systems.