

Species differences in renal platinum (Pt) concentrations in mice, rats and rabbits given a single intravenous injection of cisplatin

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Abstract

To better understand a species difference in cisplatin nephrotoxicity, we measured the renal platinum (Pt) concentrations in mice, rats and rabbits given a bolus injection of cisplatin, a platinum chemotherapeutic agent. The renal Pt concentrations were determined by a particle induced X-ray emission (PIXE) method. The ranking order of renal Pt concentrations was rabbits > rats > mice, unlike that of the nephrotoxic potentials (rats > mice > rabbits). These results demonstrate that the species difference in cisplatin nephrotoxicity may be attributed to a reactive metabolite yielded presumably by a certain enzyme such as cysteine-S-conjugate β -lyase.