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**A Microscale Synthesis of A Promising Radiolabelled  
Antitumor Drug : cis- 1,1- cyclobutanedicarboxylato  
(2R) -2-methyl-1,4-butanediamine  
platinum (II) , NK121\***

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A promising antitumor drug, cis-1,1-cyclobutane-dicarboxylato (2R)-2-methyl-1,4-butanediamine platinum (II), NK 121, was synthesized from radionuclides of platinum such as  $^{193m}\text{Pt}$ ,  $^{195m}\text{Pt}$  and  $^{191}\text{Pt}$  which were produced by neutron irradiation of enriched  $^{192}\text{Pt}$ . The overall yield was 38.6% in a synthesis time of 10 hours. The radioactivities present in 8.39 mg of NK 121 were 115.3  $\mu\text{Ci}$  as  $^{193m}\text{Pt}$ , 29.9  $\mu\text{Ci}$  as  $^{197}\text{Pt}$ , 22.0  $\mu\text{Ci}$  as  $^{195m}\text{Pt}$ , and 4.8  $\mu\text{Ci}$  as  $^{191}\text{Pt}$  at the end of synthesis. The specific activity of the NK 121 was 13.7  $\mu\text{Ci}$  ( $^{193m}\text{Pt}$ )/mg NK 121 at the end of synthesis. The radiochemical purity of NK 121 was typically 99 %. HPLC analyses confirmed that NK 121 was in an adequate chemical purity and suitable for animal experimentation.

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