

## GS5-6 Antitumor effect and mode of characteristic action induced by supramolecular substance [2] Rotaxane.

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Currently cancer death rate is increasing and it is the leading cause of death in our country. Therefore, the new development of anticancer drugs and the therapy are required, as an important subject. It is very hard to cure chronic myelocytic leukemia (CML), the therapy of complete recovery is limited the allogeneic hematopoietic stem cell transplantation at the present time. A new drug, Gleevec (imatinib mesilate), is approved for CML in our country and plays a central role about the therapy, but it has no effect for blastic phase chronic myelogenous leukemia. [2]Rotaxane is a novel supramolecular (interlocked molecular) substance composed with two molecular components (crown ether and linear molecule), and are able to move within a molecule. We have observed that [2]rotaxane (1 $\mu$ M $\sim$ 10 $\mu$ M) induces to dose-dependent inhibition of proliferation and cell death for melanoma (B16/BL6), rectum carcinoma (Colon-26) and adrenal pheochromocytoma (PC-12) cells. It is observed that morphological change reduced cell cytoplasm and dissociation of approximal cells. These suggest that is induce the apoptosis. We investigated that each crown ether and linear molecule as a component of [2] Rotaxane structure were not induced inhibition of proliferation and cell death. In these results, we suppose that a molecular structure itself or intramolecular motion of [2]Rotaxane effect in each tumor cells. Now we study the possible of novel therapy and mechanism of action by [2]Rotaxane.