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UPTAKE OF Tc-99m-MDP, Ga-67-CITRATE AND Tl-201-CHLORIDE IN MOUSE OSTEOSARCOMA (BFO). H. Nakashima, H. Hamada, K. Takaoka, Y. Nakata, H. Ochi, K. Hamada, H. Ikeda, M. Omura, Y. Onoyama, H. Okuno Osaka University Medical School and Osaka City University Medical School, Osaka

4×10^6 mouse osteosarcoma cells were transplanted to C3H mice in the dorsal subcutaneous region. Three weeks after, the tumor had grown to about 1 cm in diameter. In the tumor central ossification was seen on the radiograph. The following experiments were done. 1) 500 μ Ci of Tc-MDP was injected to the mice intravenously. Two hrs after the injection, mice were killed and imaged using gamma camera. Then, tumors, bones and muscles were excised and weighed. Each radioactivity was counted. 2) 100 μ Ci of Ga-citrate was injected to the mice. After 48 hrs, mice were killed and the same procedures were done. 3) 100 μ Ci of Tl-Cl was injected to the mice. After 5 min and 2 hrs, mice were killed and the same procedures were done.

On the image, the mouse osteosarcoma showed the marked high uptake of Tc-MDP and Ga-citrate and a little uptake of Tl-Cl. Radio-pharmaceutical concentration (cpm/g) ratios of tumor to bone or muscle were followed.

	tumor/bone	tumor/muscle
Tc-MDP (n=12)	0.448 \pm 0.220	20.68 \pm 8.74
Ga-citrate (n=11)	1.041 \pm 0.176	19.53 \pm 2.80
Tl-Cl(5min)(n= 5)	1.089 \pm 0.223	0.899 \pm 0.180
Tl-Cl(2hrs)(n= 8)	0.915 \pm 0.123	0.755 \pm 0.115

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CLINICAL EVALUATION OF TUMOR POSITIVE IMAGING WITH I-125-LABELED ANTI-HUMAN AFP SPECIFIC ANTIBODY FOR AFP PRODUCING TUMOR LINE IN NUDE MICE. M. Yanagisawa, T. Machida, M. Miki, A. Tanaka, U. Ohishi, M. Ueda, A. Kido, N. Kondo and Y. Higashi. Department of Urology, The Jikei University School of Medicine, Tokyo.

The present study is carried out to prove the feasibility of specific tumor positive imaging by the labeled anti-human AFP specific antibody for AFP producing tumor line JTG-1 in nude mice and two clinical cases.

Two clinical cases who had had orchectomy for embryonal carcinoma with seminoma and were suspected of having incurable metastases underwent I-131-labeled anti-human AFP specific antibody imaging. I-125-labeled anti-human AFP specific antibody was injected to five mice 0.68mg, 12 μ Ci for a mouse.

Serial whole body imaging was performed with pin hole collimator of scintillation camera. For a clinical cases, I-131-labeled anti-human AFP specific antibody 0.2mg, 415 μ Ci was injected and localization was observed by the PHO/CON Multi-Plane Imager System. The satisfying tumor positive images could be obtained 5 and 8 days after administration. The results of PHO/CON serial tomoscintiphotos in patients with metastases were unsatisfactory.

Serial radioautography with I-125-labeled anti-human AFP specific antibody for AFP producing tumor line in nude mice (JTG-1) was performed. I-125-labeled anti-human AFP specific antibody 10 μ Ci, 1mg was injected into peritoneal space for a mouse. The preferential accumulation into the tumor tissue and cystic fluid was recognized 24 hours after administration.

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INVESTIGATION ON THE DISTRIBUTION OF TRITIATED MENADIOL SODIUM DIPHOSPHATE IN NUDE MICE BEARING HETEROTRANSPLANTED HUMAN PROSTATIC ADENOMA.

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Menadiol Sodium Diphosphate (2-methyl-1,4-naphthohydroquinone diphosphoric acid ester tetrasodium salt; $\text{\textcircled{R}}$ Synkavit) which is a water-soluble preparation with physiological functions of natural fat-soluble vitamin K, is employed in Europe at present. This drug however, was employed as antimitotic agent, radiosensitizer, and internal irradiation agent for neoplasms in experimental or clinical studies in the past. Furthermore, on the previous study it was used as a substrate for acid phosphatase determination in vitro study, and its specificity for the prostatic acid phosphatase was established. This investigation deals with an attempt of in vivo study, which was evaluated the distribution of tritiated menadiol sodium diphosphate in nude mice bearing heterotransplanted human prostatic adenoma, through whole-body macroautoradiography and quantitative analysis by liquid scintillation spectrometer. The specific features of MSDP in the prostatic tumors, particularly in relation to tumor affinity and/or acid phosphatase activity in the prostate, were argued and also its some possibilities of clinical use in the future were discussed.

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LOCALIZATION OF RADIOLABELED ANTIBODY TO ALPHA-FETOPROTEIN IN RATS WITH TRANSPLANTED HEPATOMA AND CULTURED HEPATOMA CELLS.

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The purpose of this study is to demonstrate the specific localization of radio-labeled anti-AFP antibody in AFP producing tumor. In rats bearing subcutaneous transplants of AH-7974 hepatocellular carcinoma, total body scintigraphy by the small amounts of radioantibody (100 μ Ci) to AFP showed a positive uptake in the tumor until 120 hours in all cases. Whereas positive scans by radioantibody with large amounts of antibody to AFP were obtained in 60% of the group. The tumor/blood ratio in the experimental group was higher than that of the control group. In vitro study, uptake of radioantibody to AFP into AH-66 hepatoma cells was confirmed even in medium with high AFP levels.