عنوان مقاله:

Tissue uptakes of 67Ga-bleomycin and carrier free 67Ga in fibrosarcoma-bearing mice

محل انتشار:

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نویسندگان:

Faraj Tabeie - *Department of Medical Physics, Tarbiat Modarres University, Tehran, Iran*

B Bolouri - *Department of Medical Physics, Iran University of Medical Sciences, Tehran, Iran*

Amir Reza Jalilian - *Cyclotron and Nuclear Medicine Department, Agricultural, Medical and Industrial Research School, Nuclear Science and Technology Research Institute, Atomic Energy Organization of Iran, Karaj, Iran*

N Mosaffa - *Department of Immunology, Shaheed Beheshti University of Medical Sciences, Tehran, Iran*

خلاصه مقاله:

67Gallium-bleomycin complex (67Ga-BLM) was prepared using Thakour method. Radio-thin-layer-chromatography of prepared complex showed A2 and B2 radiopeaks with Rf at 0.7 and 0.4 respectively with a purity of above % 95. Tissue uptake of 67Ga-BLM and 67GaCl3 in twelve tissues including tumor, blood, liver, lung, spleen, muscle, skin, heart, kidney, colon, colon content ,bladder and the total body were counted by well counter at 1, 2, 4, 24 and 48 hours post injection of radiopharmaceuticals. Uptakes of tissues are expressed as percent injected dose per gram of tissue. The clearance rate of 67Ga-BLM was 1.75-1.95 times faster than 67GaCl3 at all time intervals. Bladder uptakes of 67Ga-BLM were highest among twelve tissues at 1,2 and 4 hours after injection, then falling rapidly after 24 and 48 hours. Blood uptake of 67Ga-BLM was lower than 67GaCl3 in all time intervals. Colon content uptake of 67Ga-BLM was highest among twelve tissues at 2 and 4 hours post injection. Tumor to tissue activity ratios were also calculated, showing an increase of tumor to blood and muscle ratios. Tumor to blood ratio increased from 0.3 at 1 hour to 5.3 at 48 hours. Activity ratio of muscle increased from 0.5 at 1 hour to 5.5 at 48 hours. Whole body counting of animals showed that effective half lives of 67Ga-BLM and 67GaCl3 were about 1 and 15 hours respectively, which renders faster excretion of 67Ga-BLM complex. Biodistribution data clearly indicates that prepared complex in comparison with carrier free 67Ga (67GaCl3) has two main advantages: 1) high tumor to soft tissue uptake ratio that make it suitable for tumor imaging, 2) faster excretion specially at first three hours post injection. In addition complex .is stable in vitro and in vivo

کلمات کلیدی:

67Gallium chloride, 67Gallium-bleomycin, Tumor imaging