
We measured serum immunoreactive calcitonin (ICT) in 70 patients with lung cancer and 40 normal control subjects. The ICT level in 70 patients with lung cancer varied from 40pg/ml to 2000pg/ml (mean 193.7±241.8 pg/ml) and was higher than values in the 40 normal control subjects (mean 98.7±44.5 pg/ml, p=0.02). In our results, ICT values in patients with lung cancer before operation varied from 40pg/ml to 2000pg/ml (217.7±294.9 pg/ml). After the resection they varied from 40pg/ml to 375pg/ml (152.2±85.4 pg/ml), and ICT level in patients without chemotherapy was higher than values in the other groups. Moreover the patients with striking higher level ICT died within one year.

On the classification of cell type in lung cancer patients, the ICT level were: adenocarcinoma cell, 183.8±83.0 pg/ml; squamous cell, 300.6±46.7 pg/ml; small cell, 228.1±115.1 pg/ml; large cell, 183.8±83.0 pg/ml; and statistically four cell type groups was not significantly different.

It suggested that measurement of ICT were useful in the diagnosis of lung cancer.


Two monoclonal anti-melanoma antibodies, IgM-A and IgM-B, were labeled with I-125 and evaluated on their biodistributions in B-16 melanoma bearing mice. While IgM-A is specific for B-16 mouse melanoma, IgM-B is cross reactive for common melanomas including human.

Labeled IgM was prepared by Iodogen method and purified by Bio gel P-6 column chromatography. Radiochemical yields were 90% and specific activity was 0.5 - 2 Ci/g protein.

Imaging study using γ-camera showed that both IgM-A and B had high melanoma uptake at 1 hr after injection. After 4 days, radioactivity in other tissues except for thyroid was disappeared and clear tumor image was obtained.

Labeled IgM-A showed high tumor uptake (6.6% dose/g) and high tumor/muscle ratio (about 30) at 1 day. Extremely heterogeneous intramelanoma distributions of IgM-A and B were shown by macro autoradiograms. This heterogeneous distribution might be caused by such factors as microcirculation or amounts of exposed antigen within melanoma tissue. This monoclonal IgM-B may be useful for in vivo detection of human melanoma.

UP TAKE OF Ga-67 AND HEPARAN SULFATE LEVELS IN THE LIVER OR HEART DAMAGED RATS. K. Hama, T. Sanaki, S. Kojima, and A. Kubodera. Faculty of Pharmaceutical Sciences, Teikyo University and Science University of Tokyo, Kanagawa and Tokyo.

We previously reported that heparan sulfate (HS), an acid mucopolysaccharides (AMP S), appears to play an important role on the mechanism of Ga-67 accumulation in tumor cells and inflammatory lesions. To obtain more information, in vitro Ga-67 binding percent with various AMPs were determined and the changed Ga-67 uptake in the experimental injured liver or heart and thier HS contents were investigated.

The binding percent (radioactivity in the precipitate as a percentage of total radioactivity in the incubation mixture) of HS with Ga-67 was especially high (95% over) in comparison with other AMPs such as chondroitin sulfate A (17%), B (22%), C (10%), hyaluronic acid (6%), and heparin (1% less). We investigated the relation between Ga-67 uptake and HS levels in rat livers treated with CCl4 or 2-acetylaminofluorene, and in rat heart treated with isoproterenol. In all case, the changing patterns of Ga-67 in these tissues were in good accord with those in HS content.

These results suggested that HS might be an acceptor for Ga-67 accumulation in tumors and inflammatory lesions.