**IS-1** Comparative study of PET radiotracers in different animal tumor models.

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We compared the biodistribution of F-18 labelled alpha methyl tyrosine (FAMT) and fluorodeoxyglucose (FDG) in LS-180 tumor (colorectal ca.) in nude mice and RPMI-1788 (lymphoma) in SCID mice. One hour biodistribution data in LS-180 and RPMI-1788 tumors showed higher tumor uptake of both FAMT and FDG. Tumor/blood ratio for FAMT in LS-180 tumor and RPMI-1788 was 5.45-2.63 and 2.17-0.36, respectively. Tumor/blood ratio for FDG in LS-180 and RPMI-1788 was 2.16-0.30 and 15.27-3.21, respectively. Tumor normal organ ratio for FAMT was more than 2 in all organs except kidney in LS-180 and RPMI-1788 tumors but for FDG around 1 in almost all organs. These results show better tumor visualization with FAMT than FDG except kidney.

**IS-2** Biodistribution of Tc-99m labelled chimeric mouse-human monoclonal antibody to human leukocytes and nude mice.


Chimeric mouse-human monoclonal antibody against non-specific cross reacting antigen (Ch anti-NCA-95 MAb) was labelled with Tc99m and I-125 and its binding to human WBCs and LS-180 (colorectal carcinoma cells expressing CEA on their surfaces) increased in proportion to the number of cells added. In biodistribution studies, Tc99m and I-125 labelled Ch anti-NCA-95 MAB revealed higher tumor uptake and tumor-blood ratio was around 3 after 24 hours. Tumor-normal organ ratio was also more than 2 in all organs except tumor/kidney ratio. Scintigrams of athymic nude mice confirmed the results of biodistribution studies showing a higher radioactivity in tumor and kidney of the mice administered with Tc99m and I-125 labelled Ch anti-NCA 95 MAB.

**IS-3** COMPARISON OF TL-201 AND TC-99M TETROFOSMIN IN DETECTING METASTATIC THYROID CANCER

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The purpose of this study is to compare TL-201(Tl) and Tc-99m tetrofosmin (TF) in detecting metastatic foci after total thyroidectomy of thyroid cancer. Fifteen thyroidectomized patients (M:F=3:12) underwent I-131, Tl and Tc-99m TF scans within a week. Sixteen hot spots were noted on I-131 scan and were considered as metastatic foci.

Tl scan showed 9/16 lesions (56.3%) and TF scan 5/16 lesions (31.3%). Tl scan detected one pulmonary lesion not shown on both I-131 and TF scans. In conclusion, Tl and TF were inferior to I-131 in detecting metastasis of differentiated thyroid cancer, and TF was more inferior to Tl.

**IS-4** Assessment of long-term follow-up after I-131 treatment in Graves' disease by RIA method and some Nuclear Medicine tests.

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61 Graves' disease patients treated by I-131, were followed for a long term from 4 to 9 years. The mean follow up time was 6.1 years. For 4 years after I-131 treatment, they didn't appear recurrent hyperthyroid.

Incidence of euthyroid was 85.3%. At 6.1 year time after treatment, incidence of hypothyroidism was 14.6%, so cumulative hypothyroid rate was 2.4% per year. Thyroid nodule wasn't detected on thyroid scintigrams of patients.


131I-MIBG scintigraphy was performed in 13 a year old girl, she was diagnosed as neuroblastoma and was operated. After 5 years she again complained of back pain. Ultrasoundography and Ga-67 scan was normal but there was high level of tumor marker (NSE 78.5). 131I-MIBG study showed the diffuse bone marrow uptake. MRI revealed the diffuse bone metastasis at vertebrae and bone marrow aspiration showed the tumor cell infiltration. After chemotherapy, 131I-MIBG scan revealed no diffuse bone marrow uptake. Bone tumor marker was decreased (NSE 20.3 ng/ml). Bone marrow aspiration revealed no tumor cell infiltration. 131I-MIBG study is useful for detecting the diffuse bone marrow metastasis and also good for evaluation of the effectiveness of chemotherapy in patients with neuroblastoma.