## 256

A SOLID-PHASE RADIOIMMUNOASSAY USING I-125 PROTEIN A FOR THE MEASUREMENT OF IgG SECRETED FROM HUMAN LYMPHOCYTES IN VITRO. Y.Naruki. M.Suzuki. S.Ohtsuka. M.Irie. M.Sugahara and T.Shimbo. 1st Dept.of Medicine and Lab.of Immunology, Sch.of Med., Toho Univ.

The measurement of IgG secreted from human lymphocytes stimulated by pokeweed mitogen in vitro is useful for the estimation of function of lymphocytes. We studied here whether the assay by use of I-125 Staphylococcal protein A (I-125 SPA) were useful for measurement of IgG. (METHOD) 1) I-125 SPA (RCC; 100 μCi/ml) was diluted 1,000 times with phosphate buffered saline (PBS) containing 2% bovine serum albumin. Radioactivity of diluted I-125 SPA was counted about 20,000 cpm/0.1 ml by a gamma-counter. 2)Ox, sheep or chicken erythrocytes were sensitised with different concentration of rabbit anti-erythrocyte IgG antibodies and were suspended at a concentration of 2.5 -15 x $10^7$/ml in PBS. 3)Human polyclonal IgG (Hoechst) was used for making standard curve. 4)0.1 ml of the supernatant from culture of lymphocytes was incubated with 0.1 ml of I-125 SPA at 30°C for 1 hr in plastic tube. Then 0.1 ml of solution of erythrocytes sensitized with IgG antibodies was added and the mixture incubated at 30°C for 1 hr. The tube was washed 3 times with PBS and the radioactivity of the pellet was measured. (RESULT) IgG secreted from human lymphocytes in vitro was sufficiently measured by RIA using I-125 SPA and erythrocytes of either coated by IgG antibodies.

## 258

THE CLINICAL EVALUATION OF THE DETECTION OF ABSCESS USING IN-111-OXINE LEUKOCYTES M.Noguchi,M.Suehiro,M.Iio,S.Takaoka,E.Ohtake,S.Kawaguchi,H.Murata,K.Chiba and H.Yamada. Tokyo Metropolitan Geriatric Hospital. Itabashiku, Tokyo.

The clinical evaluation of the In-111-oxine leukocytes scan was performed for the detection of abscess using rabbits and human FUO cases. The experimentally induced abscess was made by turpentine oil subcutaneous injection in rabbits. The number of WBC had remarkably increased within 1 week after induction. Repeated Indium scan showed the positive results only at the time of leukocytosis. The chronic abscess with more than 20 days duration showed no accumulation of the label in spite of the presence of pus in the lesion. Active study by Gallium scan showed almost same results with Indium scan. However Indium scan showed superior results to Gallium scan since Indium does not visualize bone and intestine, and background is lower than Gallium. In-111-oxine leukocytes after negative Limulus test were applied upon 3 human FUO cases. No evidence of abnormal accumulation was obtained, however no finding of side reaction was also noted. We concluded that In-111-oxine leukocytes scan showed the visualization of abscess successfully in experimental abscess in rabbits. Human study is still remained to be solved.

## 259

ON THE METHODS FOR IMPROVING DIAGNOSTIC EFFICACY OF MEDICAL IMAGES. T.A.Iinuma and Y. Tateno. National Institute of Radiological Sciences, Chiba.

Medical images including scintigraphic images must be evaluated by its clinical efficacy. The clinical efficacy is divided into four stages. Here we deal only with clinical efficacy No.1, that is, diagnostic efficacy. There are two methods to improve the diagnostic efficacy of medical images: (1) increase in diagnostic accuracy of image interpretation by doctors and (2)automated diagnosis of images by computer processing. At present, almost all images are read with anatomical information by doctors, and differential diagnoses are made through doctor's brain. So the method to improve the accuracy of doctor's interpretation is to produce an optimal image quality for a particular type of medical image. We have now various ways of changing spatial frequency characteristics and display characteristics of images, which must be judged against confirmed diagnoses of each image. As for the automated diagnosis, we have only had a little success, but the research will be continued to aim the better diagnostic accuracy than doctor's diagnosis. In order to obtain statistically significant result for diagnostic efficacy, an imge data base must be constructed with known confirmed diagnoses for each image. A group study is necessary to collect a large amount of cases prospectively under the same protocol.

## 260

DEVELOPMENT OF A INTEGRATED DIAGNOSTIC IMAGE PROCESSING SYSTEM.-CLINICAL ASPECT-. A.Heshiki.T.Nagai.K.Saito.I.Obayashi.Y.Suto.K.Sato. Gunma University Hospital and Toshiba Medical Engineering loboratory. Maebashi and Otawara.

A total diagnostic imaging processing system was developed based upon optimal combination of diagnostic procedures and decision tree algorithms,which are pregrammed and can be retrieved. CT,nclear medicine and ultrasound images are digitaliged, transferred to the system by an off-line medium(floppy disc)and stored.These images are displayed on 20-inch color display unit.

The system consists of color display and key board unit.Hardware consists of a mini-computer,Tosbac-7/40,256KB memory,30MB magnetic tape,1MB floppy disc.

The system aims
1.to help clinicians understand and choose an optimal combination of diagnostic procedures and steps in integrated body imaging
2.to file digitaliged images
3.to improve statistical analysis
4.to make the system be applicable as a reporting system