

外 人 講 演 II

CURRENT AND FUTURE DEVELOPMENTS IN RADIOPHARMACEUTICALS

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This paper will attempt to describe the current and future status of radiopharmaceuticals under the following topics. A) *Blood cell labeling* 1) *In vivo* labeling of red cells, 2) *in vitro* labeling of red cells, 3) *in vitro* labeling of white cells, platelets and lymphocytes. B) 1) *Bifunctional chelates* based on EDTA, DTPA, EDDA and IDA and labeled with Tc-99m and Trivalent radionuclides, 2) IDA derived hepatobiliary agents. C) *New radiopharmaceuticals* of Tc-99m for 1) hepatobiliary studies (other than IDA derivatives) 2) renal imaging, 3) Thrombi localising agents (Plasmin, Streptokinase, Urokinase, Fibrin etc.) labeled with Tc-99m and other radionuclides. 4) New radiopharmaceuticals for myocardial localisation (perfusion) will be described and their relative use will be discussed. D) *Future developments* in radiopharmaceuticals will involve new concepts, new synthetic compounds, new methods for Tc-99m labeling (solid state reduction systems), and new uses for older agents. Intermediate half life radionuclides (Ru-97, Hg-197, Pb-203, In-111, Sm-153 etc.) should be exploited for further developments and clinical use in Nuclear Medicine. Some approaches in this area will be described.