

# RADIOLABELING AND SCINTIGRAPHIC EVALUATION OF TC-99M LABELED 5-FLUOROURACIL AND ZOLEDRONIC ACID FOR TUMOR IMAGING

**Shekhawat Kan<sup>1,2</sup>**

<sup>1</sup>Bhagwan Mahaveer Cancer Hospital and research Centre, India

<sup>2</sup>Jaipur National University, India

In nuclear medicine, the radiation chemistry provides efficient tools for cancer imaging using compounds labeled with radionuclides that emit gamma radiations. In my presentations, I will be explaining the radio labeling methods of two new compounds, (cancer drugs): 5-Fluorouracil (5-FU) and zoledronic acid (ZA) for tumor imaging by the scintigraphy (nuclear imaging). 5-fluorouracil is a chemotherapeutic agent and generally used in the targeted therapy for the solid tumors, therefore, I had objective to make this 5-FU a diagnostic compounds for the colon carcinoma, a type of solid tumors, patients. The other drug, zoledronic acid is a bone seeking bisphosphonate and has a strong affinity to bones, so the target was to do osteoscintigraphy. I have radio labeled these two anti-cancer compounds with work horse of nuclear imaging: <sup>99m</sup>Tc radioisotope. For radiolabeling, we have adapted standard reduction methods with slight modifications used for general radio labeling of radioisotopes. The different concentrations of reducing agents has been used and also standardized for adequate radiolabeling. The chemical analysis of these compounds also has been done prior to human studies. The previous work regarding the animal and human has been studied. Radiochemistry of the compounds has been studied. We have conducted human studies with these compounds after taking proper safety. These both radio pharmaceutical injected intravenous and nuclear imagings were done with the help of the SPECT system. The other clinical and radiological data also used for the correlations. Radio-pharmacokinetics and bio-distributions have been analysis with the help imaging data and processing software (Syngo, Molecular Imaging). The results of the human studies were very much favorable to make these compounds potential radiopharmaceutical for the Ca Colon and bone cancer respectively. The 5-FU and ZA have provided very satisfactory data and information for to use them as for the nuclear medicine imaging.

rsonuclear@gmail.com