

International Conference on

# Nuclear Medicine & Radiation Therapy

July 14-15, 2016 Cologne, Germany

## Biodistribution of PEG coated superparamagnetic iron oxide nanoparticles radiolabeled with $^{68}\text{Ga}$ in normal mice

Saeed Shanehsazzadeh<sup>1,2</sup>, Afsaneh Lahooti<sup>3</sup>, Sophie Laurent<sup>1</sup> and Saeed Sarkar<sup>3</sup><sup>1</sup>University of Mons, Belgium<sup>2</sup>Nuclear Science and Technology Research Institute (NSTRI), Iran<sup>3</sup>Tehran University of Medical Science, Iran

**Objectives:** The purpose of this study is to evaluate the biodistribution of polyethylene glycol (PEG) coated superparamagnetic iron oxide nanoparticles radiolabeled with  $^{68}\text{Ga}$  in normal mice after intravenous administration of this probe.

**Materials and methods:** Three mice were sacrificed at specific time intervals (5, 15, 30 and 60 and 120 minutes post-injection) and the percentage of injected dose per gram of each organ was calculated by counting of each organ of mice.

**Results:** The biodistribution data revealed high amount uptake by liver and spleen (51.70 and 16.92 %ID/g by liver and spleen at 30 minutes, respectively and these values were 60.62 and 12.65 %ID/g at 120 minutes post injection). The clearance of other organs was fast.

**Conclusion:** These results suggest that  $^{68}\text{Ga}$  radiolabeled PEGylated superparamagnetic iron oxide nanoparticles ( $^{68}\text{Ga}$ -PEG-SPION<sub>s</sub>) has susceptibility for applying in Positron emission tomography- Magnetic resonance Imaging (PET-MRI) as a theranostic agent for detection of liver and spleen malignancies.

### Biography

Saeed Shanehsazzadeh has completed his PhD. at the age of 33 years from Tehran University of medical sciences and postdoctoral studies from Biospion. He is the assistant professor of NSTRI, Tehran, Iran. He has published more than 40 papers in reputed journals and now he is doing his postdoc at Umons, Belgium in nano.

[saeed.shanehsazzadeh@umons.ac.be](mailto:saeed.shanehsazzadeh@umons.ac.be)

### Notes: