



Joint Symposium 2

Oncology & Theranostics / European Organisation for Research and Treatment of Cancer (EORTC)

Sunday, September 10, 15:00 – 16.30

Session Title

Nuclear Medicine Imaging of the Immune System

Chairpersons

Egesta LOPCI (Milan, Italy)

Christophe DEROOSE (Leuven, Belgium)

Programme

15:00 - 15:20 **Weibo Cai** (Madison (WI), USA): Molecular Imaging of the Immune System

15:20 - 15:40 **Sandra Heskamp** (Nijmegen, The Netherlands): Radiolabeled Markers of Immune Response

15:40 – 16:05 **Egesta Lopci** (Milan, Italy): Imaging Tumor Metabolism and its Heterogeneity

16:05 – 16:30 **Elisabeth G E de Vries** (Groningen, The Netherlands): Translating Immuno-PET for immune-oncology treatments into the Clinic

Educational Objectives

1. To present the currently available nuclear medicine molecular imaging tools for probing the immune system and its molecular targets.
2. Provide an overview of the use of molecular imaging to identify patients that are likely to respond to immune-oncological (IO)treatments. Illustrating how early imaging of the immune system can help identify responding patients with cancer.
3. Illustrate the link between tumor metabolism and the activity of the immune system and highlight its importance for oncological PET during IO-therapy.
4. Provide an overview of novel theranostic strategies utilizing the immune system in oncology.

Summary

The last decade has seen an unprecedented revolution in the field of oncology through the use of immune-oncological agents, such as checkpoint inhibitors and CAR-T cells. This rapidly evolving field pertains great opportunities for in vivo molecular imaging of key molecules. A large number of radiopharmaceuticals targeting immune checkpoints and other key immune molecules have been developed. This session will provide an overview of the most important targets, their role within the immune system, and how they are harnessed for IO therapy. The radiopharmaceuticals targeting them will be presented, and the most relevant preclinical and clinical data will be discussed. The potential for imaging of the immune system in a number of clinical scenarios, e.g., prediction of response, and early therapy monitoring, will be illustrated. The complementarity between metabolic tumor imaging and immune system imaging of tumors will be highlighted.

Key Words

PET, immune system, PD-1, PD-L1, CD8, CAR-T, immune checkpoint, immune checkpoint inhibitor