



Present and Future of the Radio-Molecules used in Detection of Sentinel Lymphatic Nodes

Eutimio G. FERNÁNDEZ N. ^{1*}, Bluma L. FAINTUCH ¹, Relma T. DE OLIVEIRA ²,
Danielle P. WIECEK ¹, Rodrigo TEODORO ¹ & Renato S. DE OLIVEIRA FILHO ³

¹ *Radiopharmacy Center, Institute of Energetic and Nuclear Research,
Av. Prof. Dr. Lineu Prestes, N° 2242 – Butantã. Cidade Universitária “Armando de Salles Oliveira”
Sao Paulo, SP 05508-000, Brazil*

² *“Salvador Allende” Hospital. Calzada del Cerro #1551. Havana, Cuba*

³ *Faculty of Medicine, Federal University of Sao Paulo, SP, Brazil*

SUMMARY. Detection of the sentinel lymph node has become a mainstay of certain surgical interventions for cancer. In this sense, physiological and biochemical properties of the molecules employed for early detection of such metastasis have become relevant in many specialties. Traditionally the main characteristics considered for such radiopharmaceuticals are particle size and surface features. In addition, design of radiolabeled molecules has to take in account anatomy of the vascular lymphatic epithelium and its interaction with such agents. The aim is to create more specific and effective drugs, thus precisely shaping and eventually remodelling the surgical strategy for a given patient. Advances in diagnostic imaging open perspectives for additional categories of agents, endowed with different physico-chemical features as required by positron-emission tomography and other sophisticated procedures. This review covers the molecules used in sentinel node finding as well as some related topics, which can help to understand their action mechanism and failures.

KEY WORDS: Cancer, Melanoma, Metastasis, Radiopharmaceutical, Sentinel Lymph Node

* Author to whom correspondence should be addressed. *E-mail:* eutimiocu@hotmail.com