# Antibody Engineering & Therapeutics

**December 15 - 18, 2024**
**Marriott Marquis San Diego**

## Marika Nestor: the Future of Radioimmunotherapy

Marika Nestor is a Professor in Biomedical Radiation Sciences at Uppsala University, Sweden. She obtained her PhD in 2006 at Uppsala University, and heads a translational research group since 2007, focusing on creating and optimizing cancer-targeting radiopharmaceuticals and radiosensitizers. Her group has created and characterized several novel radioconjugates, one if which is currently pursued towards clinical translation.
Prof. Nestor, honored with awards like the Senior Investigator Award and the Attractive Innovation Award, receives support from prestigious organizations like The Sjöberg Foundation, Sweden's innovation agency VINNOVA, The Swedish Cancer Society, and The Swedish Research Council.

### Could you tell us about your journey into the field of radioimmunotherapy (RIT) and what inspired you to focus on radiolabeled antibodies for cancer treatment?

My journey into radioimmunotherapy began during my PhD, where I worked on RIT for head and neck cancer as part of a highly translational project. This allowed me to engage closely with both preclinical research and clinical applications. I was immediately captivated by the potential of RIT and the theranostic approach, which allows for a specific and personalized cancer treatment by combining therapeutic and diagnostic capabilities in a single platform.

### Your work focuses on enhancing the efficacy of radioimmunotherapy. What initially attracted you to this field, and why do you believe it holds promise for cancer treatment?

What drew me to radioimmunotherapy was the elegant concept of combining the therapeutic efficacy of radiotherapy with the specificity of antibodies. The principle of "see it, treat it" enables precise patient stratification, monitoring of treatment responses, and tailored dosing, opening new avenues for truly personalized medicine. Moreover, molecular radiotherapy is uniquely suited for addressing metastatic relapse. Unlike traditional external radiotherapy, which is limited to localized treatment, molecular radiotherapy can target both primary and distant metastatic lesions. The beta particles from 177Lu can also impact neighboring cells, addressing cancer cells that might not express the target antigen and reducing the risk of resistance. This potential to tackle complex cases is why I find radioimmunotherapy so promising.

### You head a translational research group focusing on creating and optimizing cancer-targeting radiopharmaceuticals and radiosensitizers. Could you tell us a bit about what the group has achieved, particularly regarding the creation and characterization of novel radioconjugates heading toward clinical translation?

Our group has made significant progress in improving the efficacy of radiopharmaceuticals through several preclinical studies, yielding highly promising results with several combination and fractionation approaches. Moreover, we have developed a novel radiolabeled antibody designed for the treatment of various squamous cell carcinomas. This project has reached an exciting milestone, as our academic-initiated clinical trial has just has been approved to begin its Phase 1 clinical trial approval. We aim to begin the first patient treatments in January, marking a crucial step toward translating our research into impactful clinical therapies.

### Are there any promising areas of research or emerging technologies that you believe could further transform RIT in the coming years?

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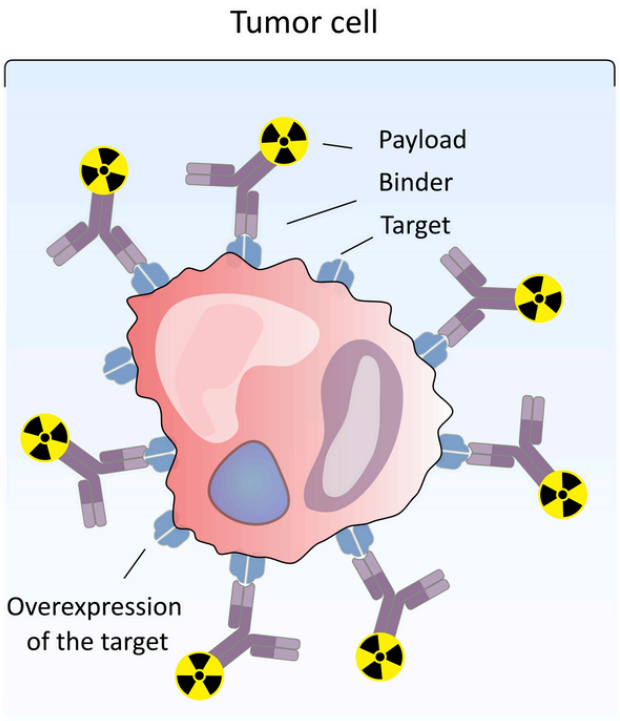



Absolutely. There are several strategies on the horizon that could significantly boost the efficacy of RIT and reduce potential toxicity. Fractionation and combination therapies, such as integrating RIT with immune checkpoint inhibitors, are particularly exciting. Additionally, innovative approaches like pretargeting techniques and antibody modifications offer great potential. These advances can improve tumor targeting, reduce off-target effects, and enable more flexible and effective treatment regimens.

**What are the primary challenges that radiolabeled antibodies face in RIT, particularly regarding prolonged radioactivity exposure?**

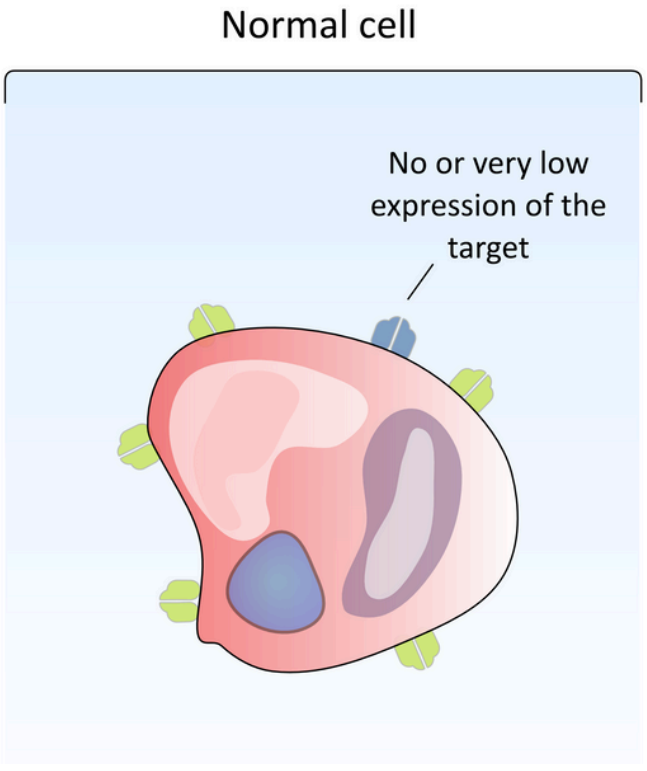
While RIT is highly promising, it faces challenges, especially concerning potential bone marrow toxicity and limited tumor penetration due to the size of antibody molecules. However, I am optimistic that these issues can be addressed through strategies like those I mentioned earlier, along with careful selection of target antigens. Antibodies provide unmatched affinity and specificity, and overcoming these barriers could lead to a new era of highly effective RIT treatments for a broad range of cancers.

**You will be joining us in San Diego to talk about Potentiation Strategies to Enhance the Efficacy of Radioimmunotherapy. What do you hope will be the key takeaways from this talk?**

I hope to convey the remarkable potential of RIT in advancing cancer therapy and share insights on the expanding toolkit of strategies that are making RIT more powerful and versatile, which could make a substantial difference in treating resistant and advanced cancers.

**Where do you hope your research will take you in the coming years?**

My vision is to see RIT as an established tool for treating advanced cancer, complementing existing therapies and addressing unmet needs. By advancing both the science and clinical application of RIT, I hope to contribute to significantly improving outcomes for patients with advanced or treatment-resistant cancers.




**Marika Nestor will be joining us in San Diego 15-18 December.**

**Find out more at https://informaconnect.com/antibody-engineering-therapeutics/**

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