

Development of Radiolabeled TfR1-Targeting Ligands

NAME : Sun Xiaohan

Faculty or School Affiliation : Graduate School of Biomedicine and Engineering, Hokkaido University

Research Lab: Applied Molecular Imaging

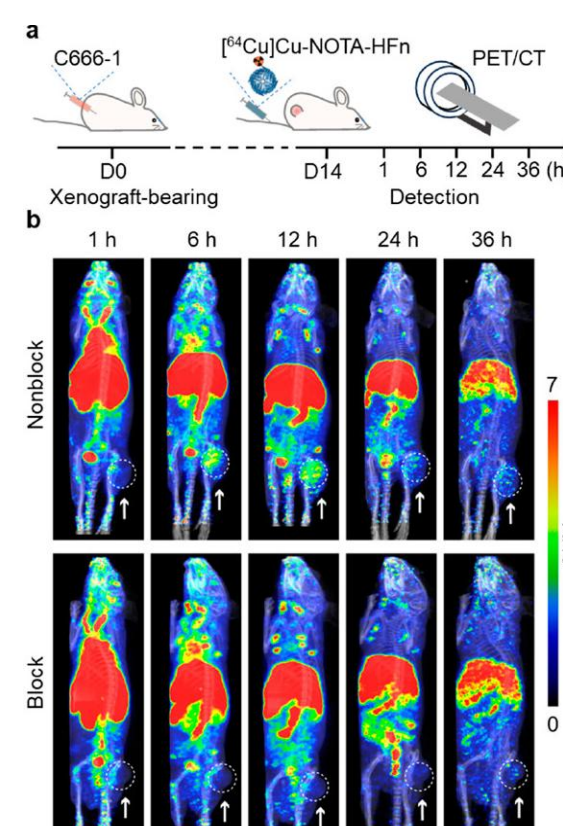
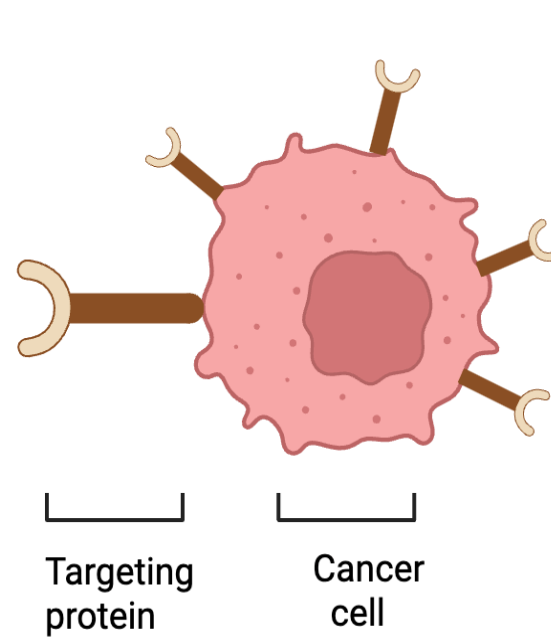
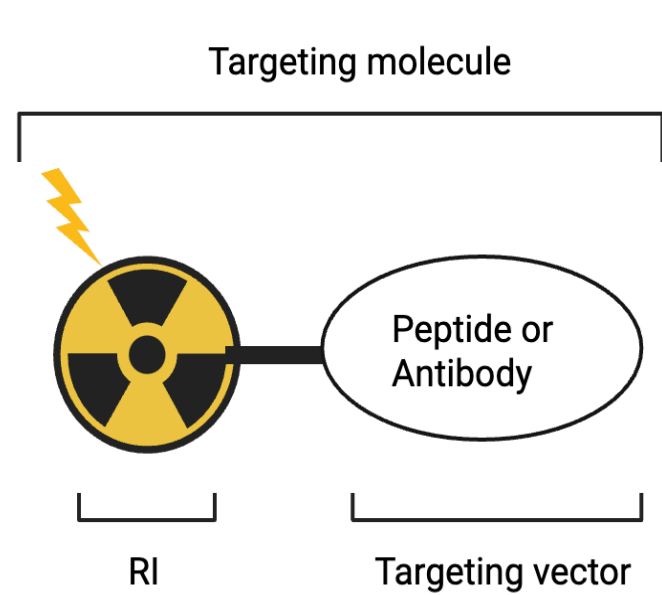


Vision for Future Society

- Visualizing the differences between cancer cells and normal cells
- More precise and accurate diagnosis and prognosis of cancer
- Targeted treatment possible for numerous cancers

- Cancer cells exhibit excessive expression of transferrin receptor 1 (TfR1), which is involved in iron uptake, and it is known that TfR1 expression levels correlate with the malignancy and progression of cancer.
- The intermediate-molecule peptide TfRB1G3 exhibits higher TfR1 affinity than the endogenous ligand transferrin (Tf).
- A radioactive-labeled compound, NODAGA-TfRB1G3, was synthesized.
- By labeling with radionuclides suitable for diagnosis or treatment, applications as nuclear medicine agents for tumor diagnosis or therapy are expected.

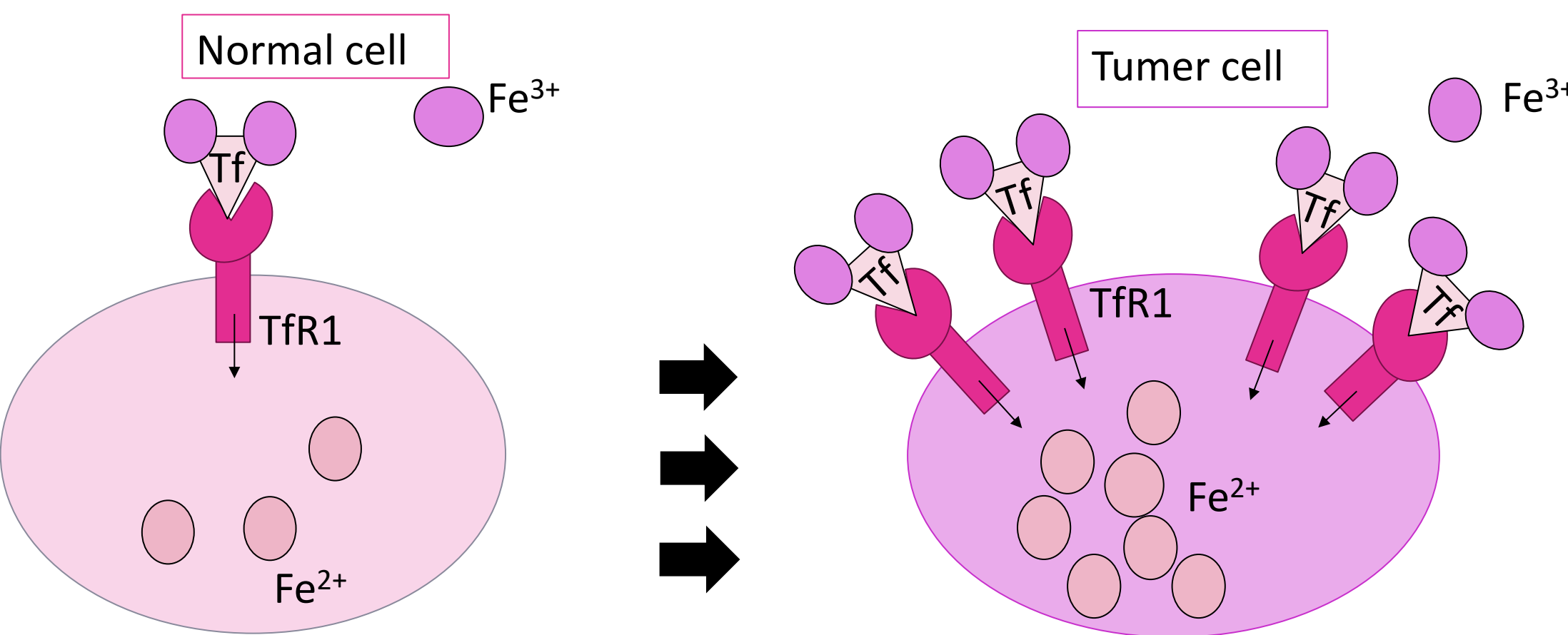
Background: Radioactive Tracers and Nuclear Medicine Imaging



Eg : ^{64}Cu -HFn PET mage

*Reference:<https://www.petscaninmumbai.com/blog/know-about-mri-and-pet-ct-scan/>

Surface target of tumor cells : TfR1



Nuclear medicine agents for tumor diagnosis and treatment