



NOVEL MEDULLARY THYROID CANCER THERAPY

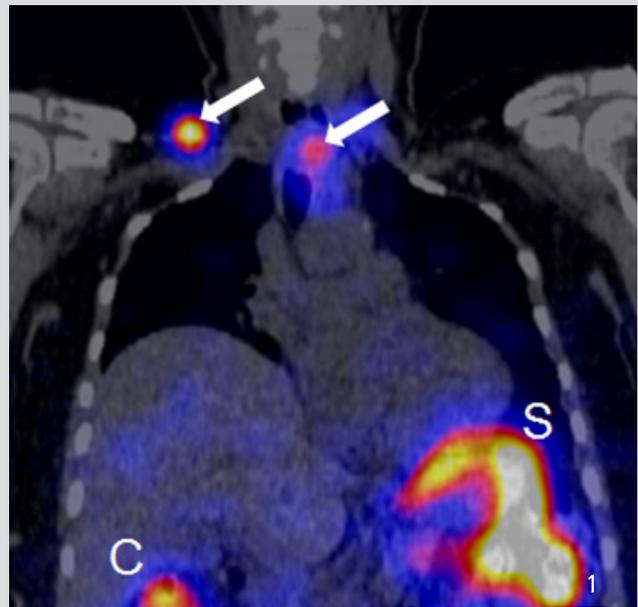
Problem – Challenge

Drug development is a highly expensive, lengthy and time-consuming process. Precisely targeting a specific dysfunctional receptor is arguably the most difficult aspect of modern drug design. Very often it requires decades from the initial idea to the finished product. Highly skilled specialists at the Centre for Radiopharmaceutical Sciences (CRS) from the Paul Scherrer Institute (PSI) have recently developed a targeted radio-pharmaceutical (an agent carrying a radioactive substance) to be directed against a rare type of tumor known as Medullary Thyroid Cancer (MTC), a disease which affects both children and young adults.

Solution

At the beginning of 2016 PSI had developed, and patented a short fragment (peptide) of a naturally occurring protein, known as minigastrin (MG). This peptide is able to bind to a specific type of cell receptor abundantly expressed on the surface of MTC cells. By labelling MG with a radionuclide, the peptide is then capable to directly deliver radioactive material to the targeted malignant cells which are then killed by radiation. The elegance of this approach is that the radiopharmaceutical can reach the MTC cells, even when they spread to distant tissues in the body. At the University Hospital Basel, doctors have used this new active agent for the first time, in patients with MTC.

Shortly after the publication of the preliminary results in patients, the discussions between PSI and Debiopharm, a Swiss-based biopharmaceutical company, reached full maturity. The company obtained an exclusive license for the use of PSI's proprietary MG in the field of oncology in December 2017. Aiming to develop innovative therapies that target high unmet medical needs, Debiopharm is committed to bringing the drug towards market authorization for MTC patients, as well as identifying additional tumor types that may benefit from this targeted approach.



1
Patient with metastasis of MTC:
White arrows: tumor metastasis
S: stomach with specific uptake
C: Kidney (clearance via kidneys)
Courtesy by Prof. D. Wild and Dr. C. Rottenburger,
Nuclear Medicine University Hospital Basel

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Working with open radionuclides requires
specific protection