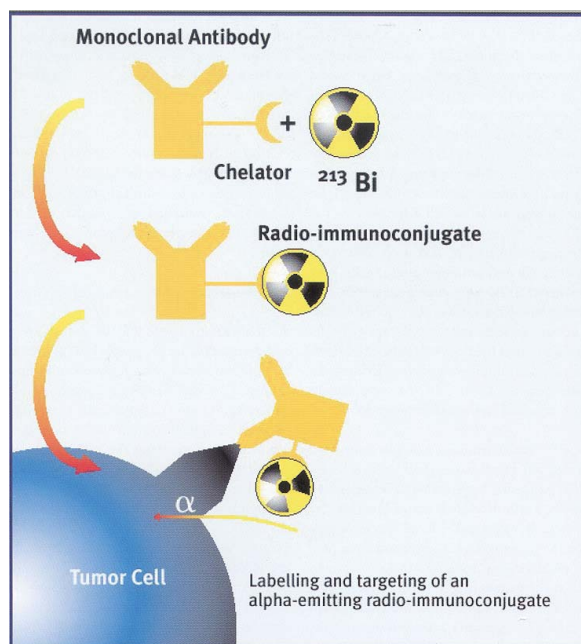


Radioimmunoconjugates for targeted alpha therapy

Description

The invention relates to an improved adjunctive therapy for early stage metastatic cancer, or cancer at the minimum residual disease stage. Few techniques are known in the prior art for adjunctive therapy, but they all suffer from some important drawbacks. For example, radiocolloid therapy is not suitable for adjunctive therapy as it is not selective of cancer cells. The use of beta and gamma emitting radionuclides are also deficient as most of the radiation dose leaves the cancer cell. The therapeutic doses cannot be achieved without severe complications. Chemotoxins can also be used but they affect single cancer cells only whereas the range of alpha particles is three to five times the diameter of a cancer cell, which is particularly suitable to treat clusters of cancer cells.

The unique aspects of the invention is the combination of an alpha emitting radioisotope (Tb^{149} , At^{211} , Bi^{212} , Bi^{213}) with monoclonal antibodies against the MUC-1 receptor, which allows the killing of individual cancer cells with the highest possible efficacy.



Innovative aspects and main advantages

- Stable bonding of the alpha emitting radioisotope via chelators to monoclonal antibodies
- High selectivity to cancer cells as MUC-1 receptor is highly expressed on many cancer cells
- Cancer cells killed in 2-3 nuclear hits
- Half-life is suitable for preparation and stability of the product
- Short half-life is suitable for killing of isolated cancer cells and preangiogenic lesions
- Low concomitant radiation dose to normal tissue
- High therapeutic ratio

Areas of application

- Nuclear Medicine
- Radiation Oncology
- Alphaimmunotherapy

Stages of development

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License and/or collaboration are possible

Scientific Contact

Prof. Barry Allen
Director, Centre for Experimental Radiation Oncology
Medical Scitec Australia PTY Ltd
St George Hospital
Gray Street – Kogarah NSW 2217
Australia

Licensing Contact

Intellectual Property and Scientific Collaboration Unit
DG JRC - European Commission
B-1049 Brussels, Belgium
Email: JRC-TechTransfer@ec.europa.eu

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