



Licensing opportunity:

Plasmid expression vector encoding human interleukin 12 under transcriptional control of p21 promoter and without antibiotic resistance for cancer

Field of use:

Gene therapy and, in particular, treatment of cancer

Current state:

Ongoing research

Developed by:

University of Primorska and

Institute of Oncology Ljubljana

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Background:

The invention relates to plasmid expression vector encoding human interleukin 12 (IL-12) and in particular its use in human cancer therapy. Although existing treatments of cancer can be highly effective, they are not always able to completely eradicate tumours. In the case of melanoma, 3–5% of melanoma patients will eventually develop local recurrence or in-transit melanoma metastases, 5–13% regional disease and 3–10% distant disease.

Description of Invention:

Potential applications of this technology are in the domain of gene therapy. The expression plasmid of the invention can be used for the treatment of cancer, meaning that it can effectively prolong survival as compared to expected survival with no treatment. Treatment with plasmid can be carried out in addition to other cancer therapies. Specifically, the plasmid is to be used as part of an adjuvant immune gene therapy in combination with standard treatments and electrochemotherapy by adding a systemic immune-mediated antitumor effect to these therapies.

Main Advantages:

Conventional promoters used to drive the expression of the therapeutic genes in plasmid vectors are unregulated and ubiquitous. Instead, the invention that is being developed jointly by the University of Primorska and the Institute of Oncology Ljubljana, enables the use of plasmid vectors that are remarkably stable, convenient and relatively cheap to produce. They allow flexibility in the design of therapies. Another advantage of this technology is that the plasmid can be recovered from the overnight bacterial culture by using appropriate methods for purification of the plasmid such as plasmid isolation kits. After the plasmid is being isolated, its identity, quantity and quality can be determined by using a range of methods such as spectrophotometry, restriction analysis and sequencing.



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V partnerstvu:

Univerza v Ljubljani

