Closed-Ended DNA Vectors Obtainable from Cell-Free Synthesis and Process for Obtaining ceDNA Vectors

ABSTRACT

The application describes methods for synthetic synthesis and cell-free synthesis of DNA vectors, particularly closed-ended DNA vectors (e.g., ceDNA vectors) having linear and continuous structure for delivery and expression of a transgene. The present invention relates to an in vitro process for production of closed-ended DNA vectors, corresponding DNA vector products produced by the methods and uses thereof, and oligonucleotides and kits useful in the process of the invention. DNA vectors produced using the methods described herein are free from unwanted side effects due to contaminants introduced during production in cell lines, for example, bacterial or insect cell lines. Further provided herein are methods and cell lines for reliable gene expression in vitro, ex vivo and in vivo using the ceDNA vectors synthesized using the methods herein.

FIG. 11B