Shepherding precision gene editing with CRISPR-Cas9 variants and adenoviral vectors

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Stellingen behorende bij het proefschrift getiteld "Shepherding precision gene editing with CRISPR-Cas9 variants and adenoviral vectors"

1. High-capacity adenoviral vectors are a robust platform for delivering and installing large genetic payloads in human cells. (This thesis)

2. Multiplexing genome editing can profit from the coordinated delivery and action of its individual effector parts. (This thesis)

3. In trans paired nicking genome editing achieves seamless genetic modification of target alleles, including those associated with essentiality and recurrence in the genome. (This thesis)

4. Stem cells and reprogrammed iPSCs combined with high-capacity adenoviral vector-assisted genome editing represent a promising strategy for the development of disease and synthetic biology models or candidate autologous cell therapies. (This thesis)

5. The advent of CRISPR technologies has brought about a revolution in genetic engineering, making it widely available to the scientific community and significantly accelerated the field of gene therapies.

6. The combined advances of bioinformatics tool and genomic sequencing is opening doors to truly understand the result of genetic engineering.

7. The road to gene therapies development requires innovation, persistence and the willingness of taking risks.

8. The gradual and remarkable increase in the precision of genome editing is being broadly accompanied by an increase in the size of the attendant tools.

9. As our knowledge of the genetic code grows and new technologies enables us to explore it at an increasingly fine scale we more and more recognise the complex nature of the intricate networks of genes and regulatory elements that control biological processes interacting in an highly coordinated manner.

10. Behind every problem there is an opportunity.