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## Functional study of the human genome

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## Stellingen behorende bij het proefschrift getiteld

### **Functional study of the human genome**

1. CRISPRko and CRISPRa libraries are robust to identify the potential transporters of doxorubicin. (This thesis)
2. K562 clones with CRISPRa-mediated upregulation of ABCB1 gene become more resistant to doxorubicin and other anthracycline drugs. (This thesis)
3. SLC2A3 gene serves as a novel doxorubicin importer and response marker. (This thesis)
4. Dual-CRISPR system is capable of interrogating both previously annotated and unannotated non-coding genomic elements in an unbiased fashion. (This thesis)
5. Ultraconserved non-coding elements which regulate a cascade of gene pathways affecting cell growth were identified. (This thesis)
6. Two Non-coding regulatory elements function as silencers and contribute to survival advantages during imatinib treatment. (This thesis)
7. Essential enhancer regions and related genes which cause decreased cell growth were identified. (This thesis)
8. Dual-CRISPR screening system is also capable of capturing clusters of NCREs with redundant biological functions. (This thesis)
9. Potential genes which are regulated by NCREs were identified by the combination of dual-CRISPR screening and scRNA-seq. (This thesis)
10. PAX6\_Tarzan may be a potential silencer and involve in cardiomyocyte differentiation via regulation of surrounding genes and possibly other genes that are key to heart development and physiology. (This thesis)
11. Never give up, always have hope in front waiting for. (Les Choristes, 2004)
12. You smiled and talked to me of nothing and I felt that for this I had been waiting long. (STRAY BIRDS, Rabindranath Tagore)