

Characterizing the role of CREM as a tumor suppressor in pancreatic cancer

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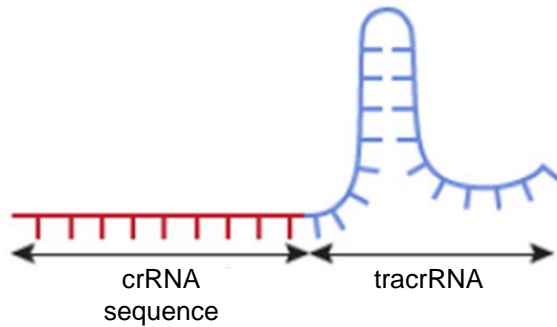
Adli Lab

CSS Fall Symposium

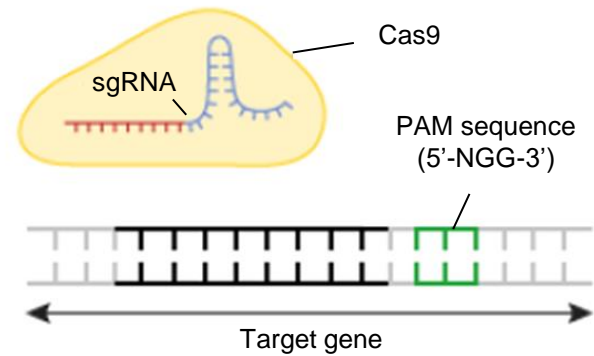
October 12, 2016

Primary Technique: CRISPR Knockout

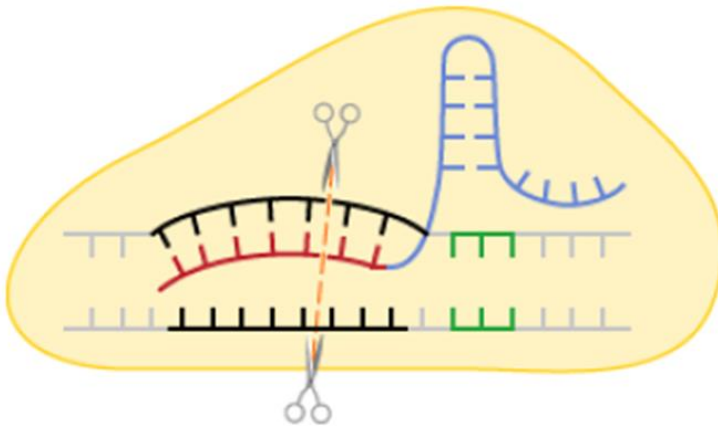
1 sgRNA (single guide RNA)



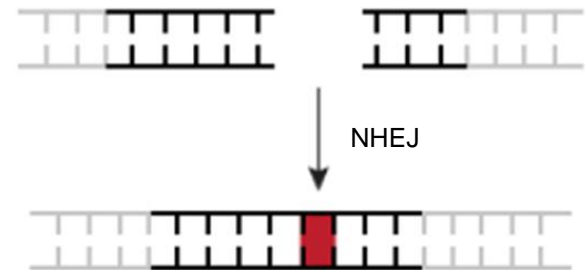
2 sgRNA + Cas9 protein



3 Target specific cleavage

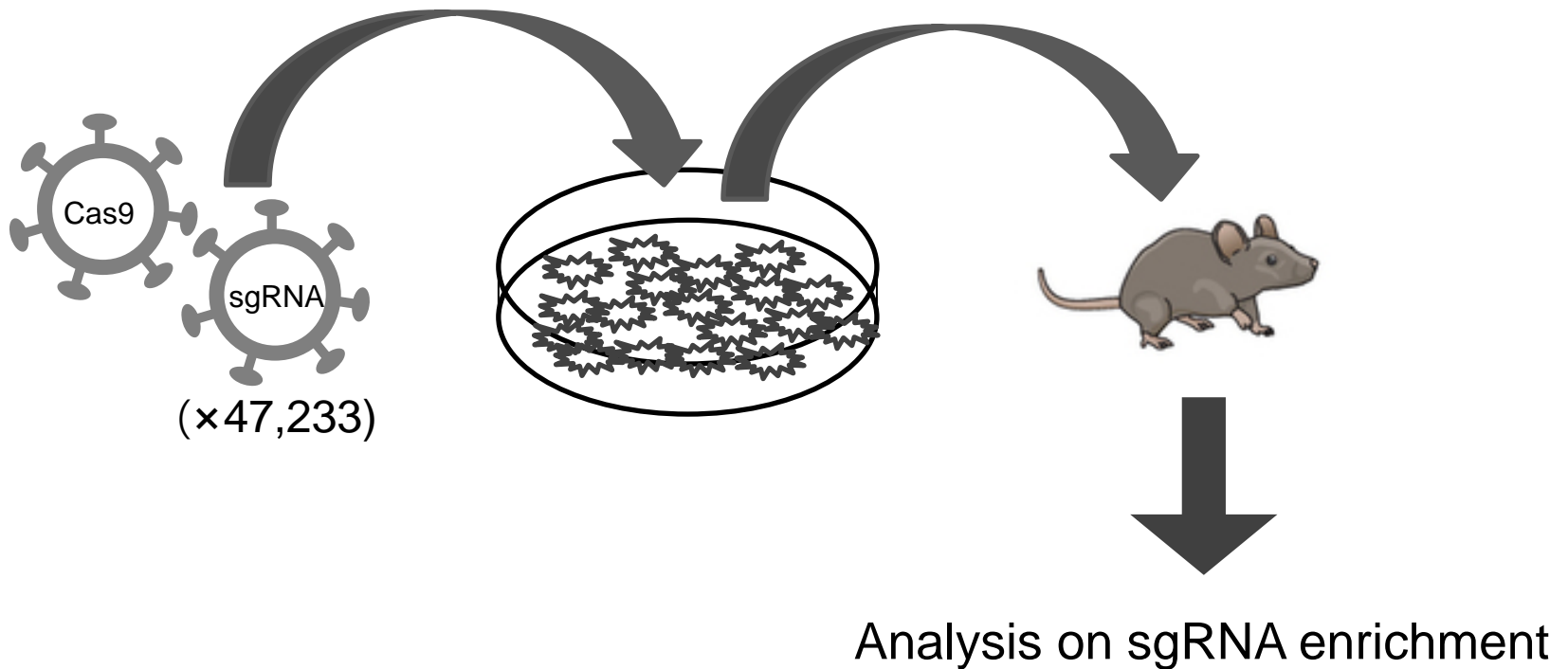


4 Cellular error-prone repair "knocks out" gene



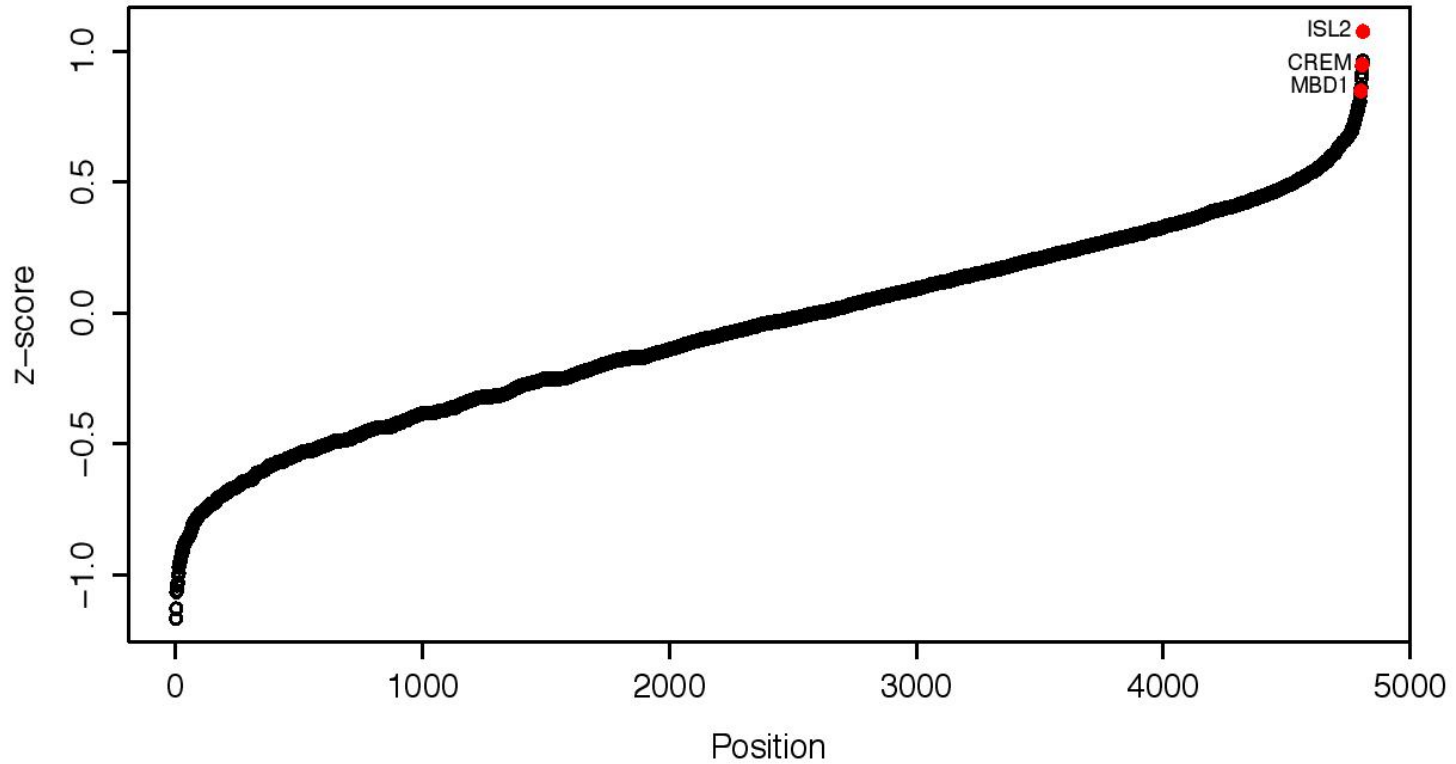
Why CREM?: Sabatini Library Screening

Sabatini Library: 47,233 sgRNAs targeting 4,990 genes

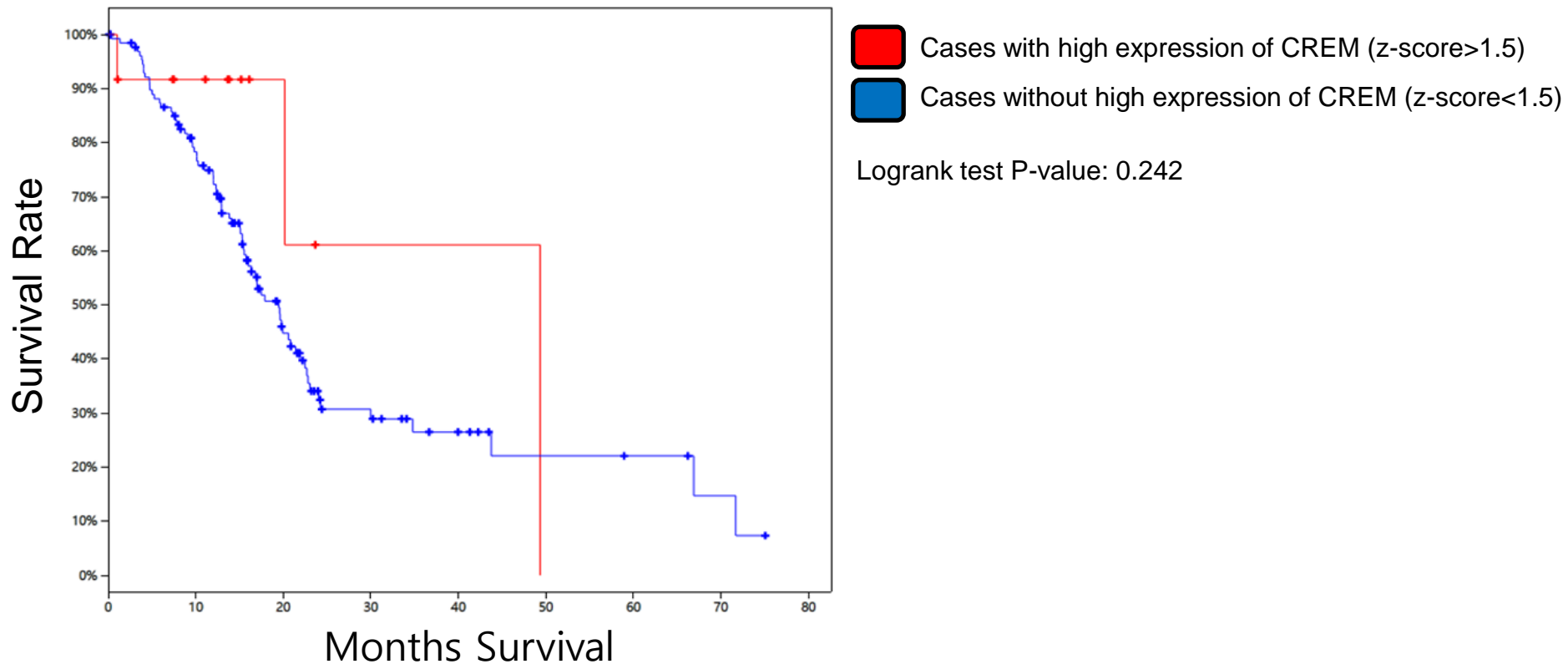


Screening Results

sgRNAs Enriched

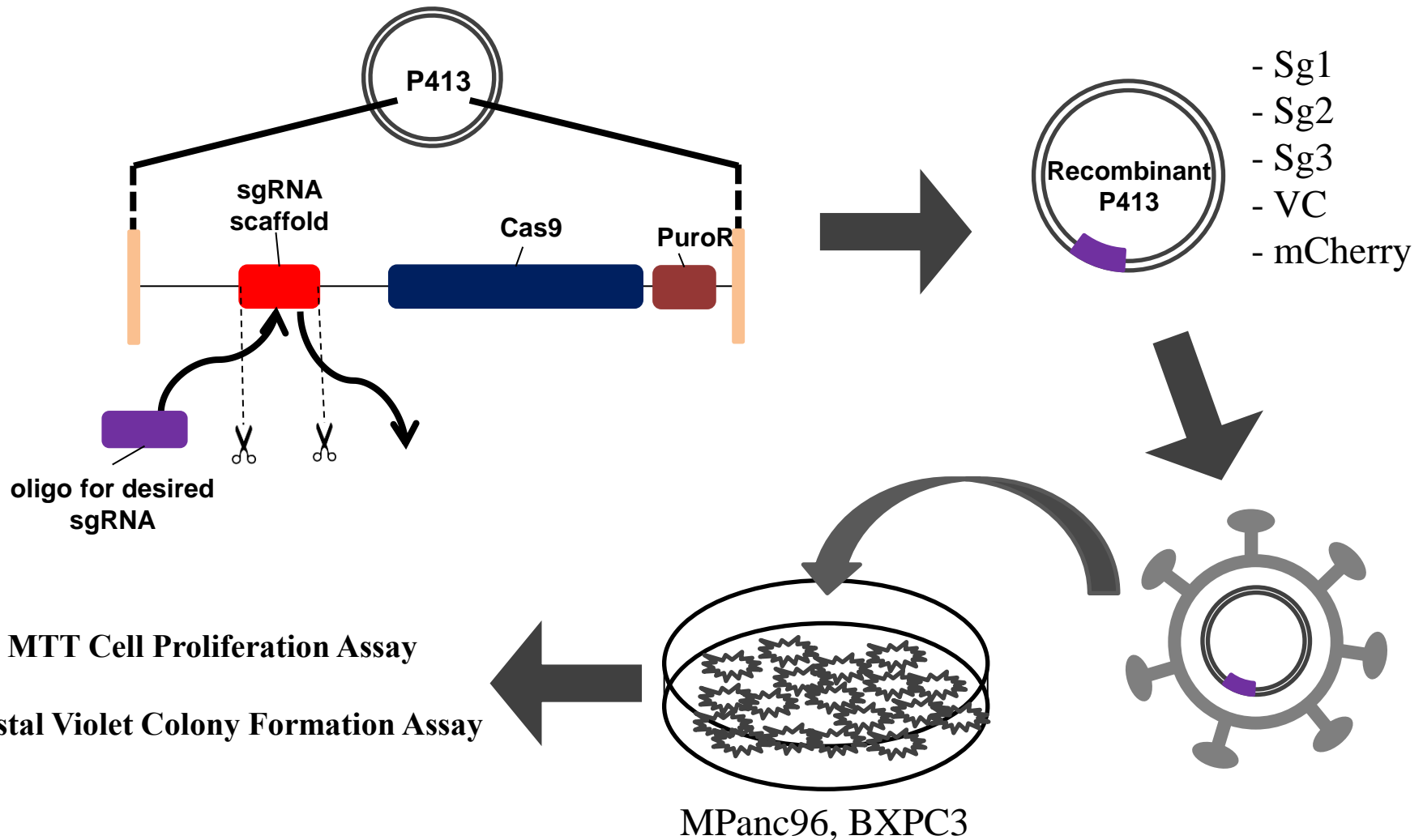


Patient data: Correlation between survival rate and expression of CREM



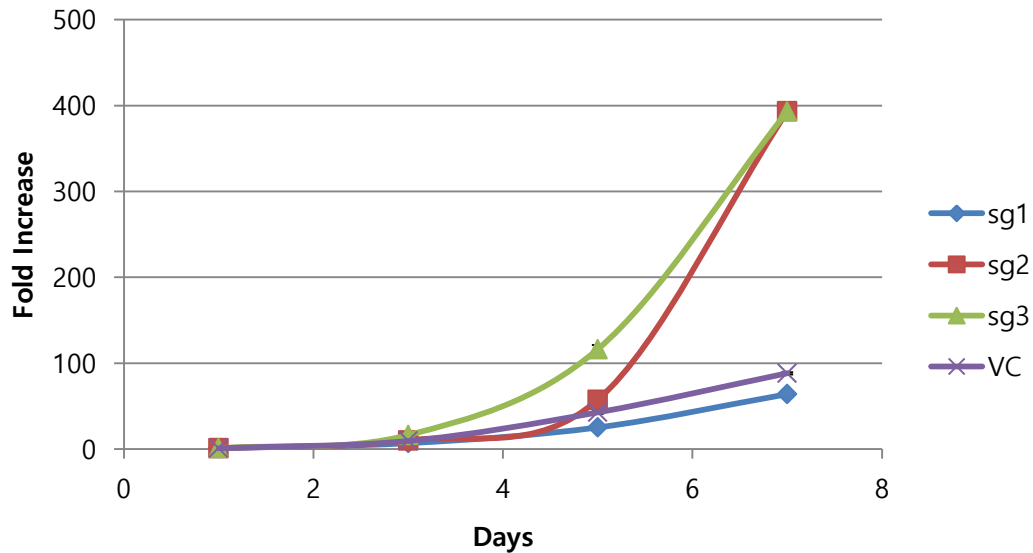
	# total cases	median months survival
Cases with high expression of CREM	12	49.34
Cases without high expression of CREM	132	19.48

Experimental Design

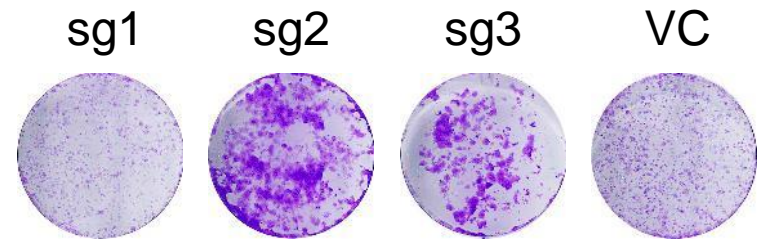


Cell Proliferation Assay Results (MPanc96)

MTT Assay Results



Crystal Violet Assay Results

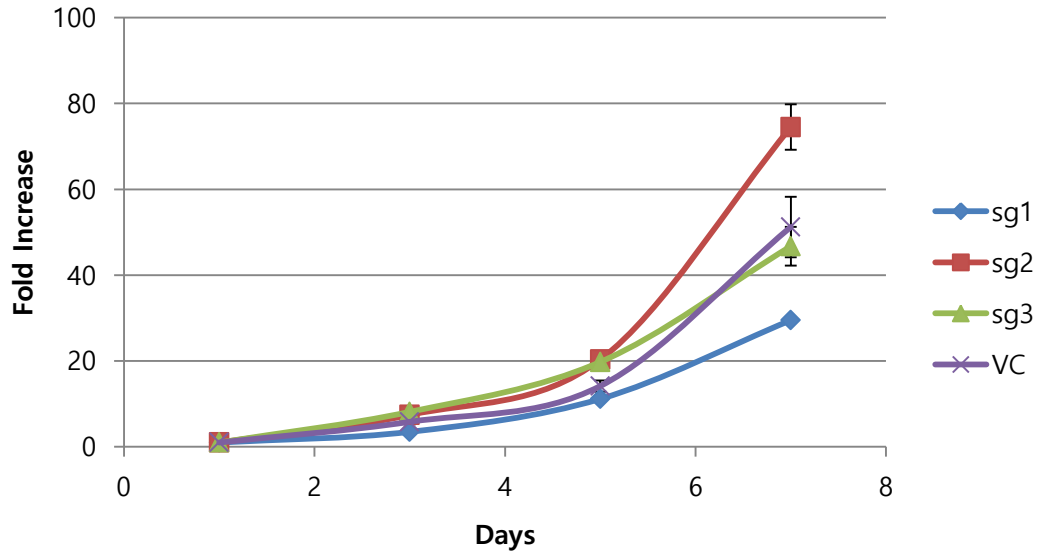


α -tubulin:

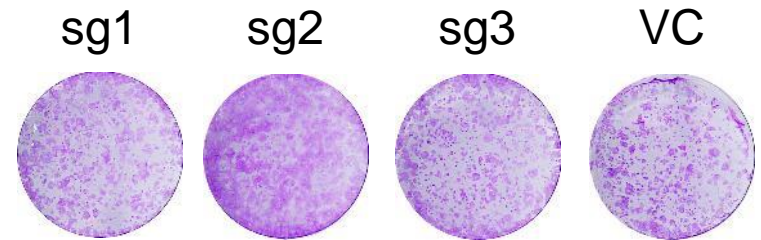


Cell Proliferation Assay Results (BXPC3)

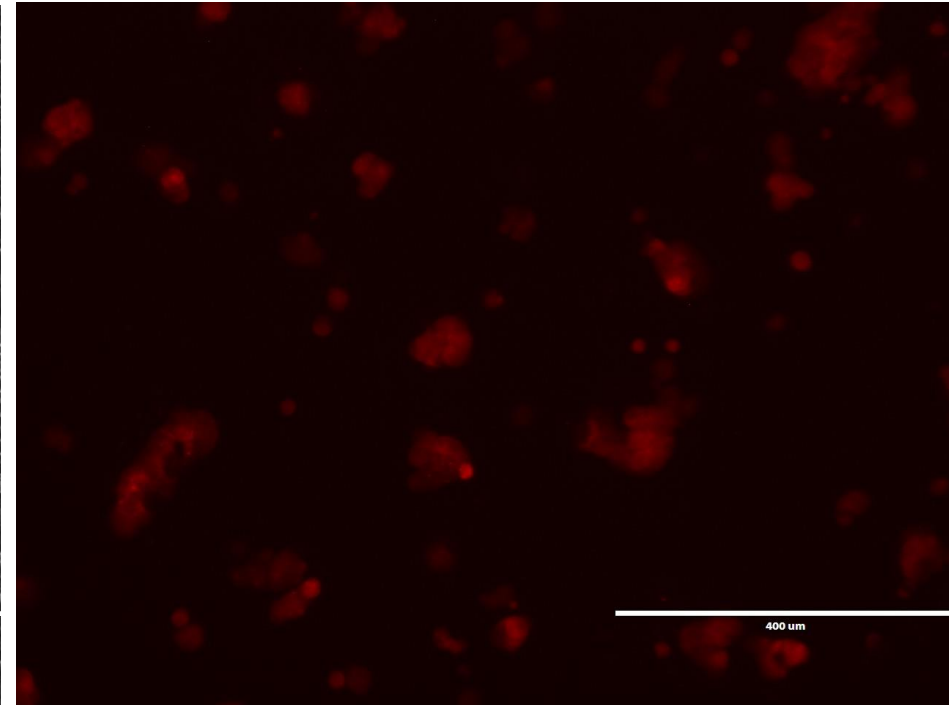
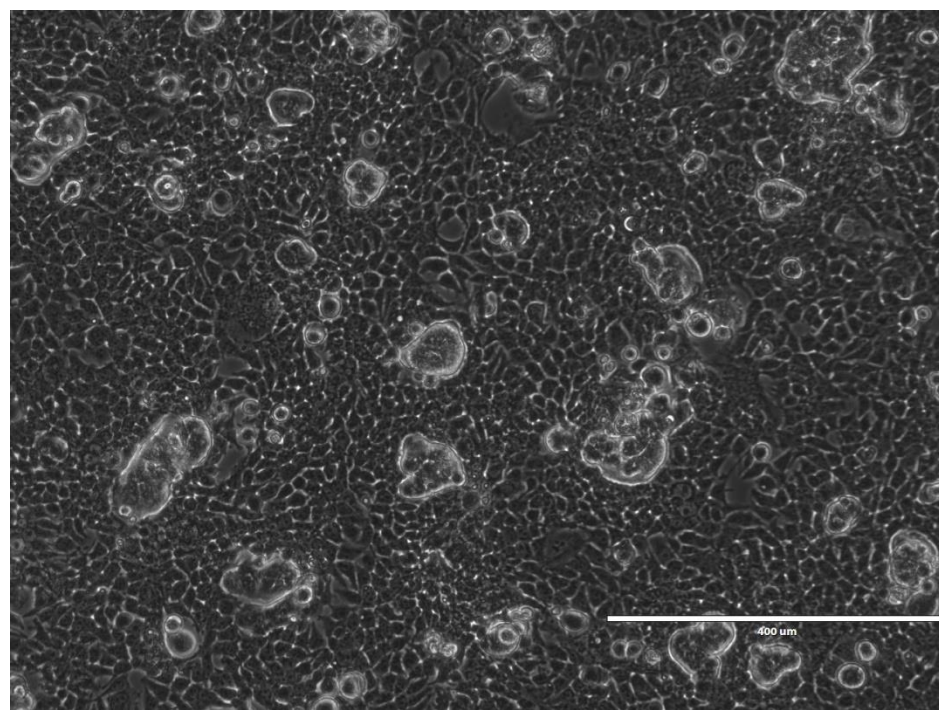
MTT Assay Results



Crystal Violet Assay Results



Visualization of the Infection Rate



What's Next?

- Single cell suspension to acquire 100% CREM-knockout in the population
- ChIP-seq to discover genes affected by CREM

Acknowledgements

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