Identification Of Selective Regulators Of Oncogene Translation

Tech ID: 34481 / UC Case 2022-194-0

TECHNOLOGY DESCRIPTION

TECHNOLOGY: The UCSF scientists developed a CRISPi screening platform with a unique 5'-UTR reporter construct to identify selective regulators of oncogene or tumor suppressor gene translation. By identifying the novel regulators, the platform enables identification of novel anti-cancer drug candidates and uncovering new uses of existing pharmaceutical compounds.

DEVELOPMENT STAGE: The inventors have optimized the novel CRISPRi screening system to identify new regulators of c-Myc translation in pancreatic cancer, including RNA-Binding Motif (RBM). They have validated RBM genetically in vitro (cell viability, colony formation, and cell anchorage independent growth) and in vivo (tumor weight) in pancreatic ductal adenocarcinoma model. They are working on screening for KRAS 5'-UTR and expanding the platform to other oncogenes and tumor suppressor genes.

COMPETITIVE ADVANTAGE: Currently, no screening platform identifies regulators of translation initiation. By targeting the translation initiation, this platform unveils a landscape of previously unknow targets of drug development. Further, this platform can be repurposed to study the process of selective translation of key drivers of many disease types.

The current invention can be combined with SF2020-149 (elongation factor 1-alpha inhibitors) to develop targets and drug candidates for both translation initiation and elongation.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

CRISPR, Oncogene, Translation, Initiation, elongation

CATEGORIZED AS

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  - Genomics
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  - Disease: Cancer
  - Research Tools
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