Discovery Of Kras G12c Inhibitor-Specific Antibodies For Oncogene-Specific Chemically-Directed Immune Targeting

Tech ID: 34509 / UC Case 2023-017-0

VALUE PROPOSITION

The search for tumor specific antigens has been a long term goal in oncology, especially to provide a method to differentially recognize tumor vs. normal cells. However, there are very few unique cell surface proteins that cancer cells express which are not expressed on some normal cells, thus limiting the therapeutic index achievable by this approach. There is a need for neoantigens that are amenable to immunotargeting.

TECHNOLOGY DESCRIPTION

UCSF investigators have developed immunotherapies to target the tumor specific antigen, KRas G12C, in cancer cells by targeting covalent inhibitor ARS-1620 labeled KRas G12C-derived peptides that are presented on the cell surface in MHC molecules. This approach allows for the specific targeting of mutant KRas, and has been demonstrated *in vivo,* with preliminary work in relevant animal models completed as well. The approach demonstrates that hapten-like behavior of covalent drugs can be repurposed for the generation of neoantigens amenable to immunotargeting.

RELATED MATERIALS

▶ Zhang, Z., Rohweder, P. J., Ongpipattanakul, C., Basu, K., Bohn, M.-F., Dugan, E. J., Steri, V., Hann, B., Shokat, K. M., & Craik, C. S. (2022). A covalent inhibitor of K-Ras(G12C) induces MHC class I presentation of haptenated peptide neoepitopes targetable by immunotherapy. Cancer Cell, 40(9), 1060-1069.e7.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

KRas, ARS1620, antibody, covalent inhibitors, drug resistance, immunotherapy, neoantigen, oncology

CATEGORIZED AS

- ▶ **Biotechnology**
  - ▶ Health
- ▶ **Medical**
  - ▶ Disease: Cancer
  - ▶ New Chemical Entities, Drug Leads
  - ▶ Therapeutics

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