Covalent Chemical Inhibitors Of The Oncoprotein K-Ras (G12R)

Tech ID: 34510 / UC Case 2023-015-0

VALUE PROPOSITION

KRAS mutations are one of the most common oncogenic drivers in human cancer. While small molecule inhibitors for the G12C mutant have been successfully developed, allele-specific inhibition for other KRAS hotspot mutant remain challenging. One of such oncogenic mutants is K-Ras (G12R), with estimated >9000 cancer patients/year in the US who have this KRAS mutation (~17% of pancreatic cancer).

TECHNOLOGY DESCRIPTION

UCSF investigators have discovered covalent chemical ligands (small molecules) for the common oncogenic mutant K-Ras (G12R). Further development and testing of the covalent chemical ligands is underway.

RELATED MATERIALS

- Zhang, Z., Morstein, J., Ecker, A. K., Guiley, K. Z., & Shokat, K. M. (2022). Chemoselective Covalent Modification of K-Ras(G12R) with a Small Molecule Electrophile. Journal of the American Chemical Society, 144(35), 15916–15921.

PATENT STATUS

Country	Type	Number	Dated	Case
European Patent Office	Published Application	EP4577200	07/02/2025	2023-015

Additional Patents Pending

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OTHER INFORMATION

KEYWORDS

KRas, pancreatic cancer, targeting, small molecules, covalent chemical ligands

CATEGORIZED AS

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

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