

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

RELATED CASES

2023-015-0

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