Cyclic Peptide Ligands of the Oncoprotein KRAS (G12D)

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TECHNOLOGY DESCRIPTION

The RAS family of genes is frequently mutated in cancer and drive tumor formation and is associated with poor outcomes. Within this family, KRAS mutations account for 83% and occur in ~11% of all cancers. Several KRAS mutation variants exist with KRAS (G12D) being the most common, representing ~33.4%. Currently, there are no FDA-approved therapies targeting this variant. In fact, only one therapy has been approved for KRAS: sotorasib for the subtype KRAS (G12C) in 2021. KRAS (G12C) accounts for ~11.3% of KRAS mutations. As the global cancer burden is expected to grow annually, with 27.5 million new annual cases forecasted in 2040, novel therapies targeting KRAS (G12D) are urgently needed.

Towards the development of novel treatments, UCSF scientists have recently identified cyclic peptide ligands to preferentially inhibit the activity of KRAS (G12D). These chemical inhibitors bind to KRAS (G12D) by taking advantage of state-selective conformational changes and effectively diminish oncogenic functioning.

VALUE PROPOSITION

- Selectively targets KRAS (G12D) mutation and not wildtype KRAS
- Expands treatment strategies for several cancers

STAGE OF DEVELOPMENT

Pre-clinical

RELATED MATERIALS

- GTP-State-Selective Cyclic Peptide Ligands of K-Ras(G12D) Block Its Interaction with Raf

PATENT STATUS

Patent Pending

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- NOVEL SMALL MOLECULE COMPOUNDS FOR TARGETED CANCER THERAPEUTICS

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OTHER INFORMATION

KEYWORDS

cancer, KRas, oncology,

cyclic peptide, macrocycle

CATEGORIZED AS

- **Biotechnology**
  - Health
- **Medical**
  - Therapeutics

RELATED CASES

2020-179-0

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